HAND BOOK

OF THE

TREES, SHRUBS AND HERBACEOUS PLANTS

GROWING IN THE

MADRAS AGRI-HORTICULTURAL SOCIETY'S GARDENS
AND NEIGHBOURHOOD OF MADRAS.

ARRANGED ACCORDING TO THE NATURAL SYSTEM.

BY

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GARDENS, MADRAS.

SECOND EDITION.
Carefully Revised.

WITH A SUPPLEMENT

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MADRAS:
J. HIGGINBOTHAM, MOUNT ROAD,
Law Book-seller and Publisher.
1866.

PREFACE

TO THE

SECOND EDITION.

THE First Edition of this little Manual having been exhausted for some time, we were requested by the Publisher to revise the work for a Second Edition, making such corrections and additions as were necessary, or, as would tend to render it more useful. This we have attempted, despite our scanty leisure; and trust that the little book in its new dress, will meet with, at least, the same approval as before.

The original book was found, it is presumed, a useful Manual of reference to the Amateur gardeners at the Presidency, as well as to the visitors at the Society's Gardens and the Park.

There are probably many in Madras, pursuing the study of Botany, whose business will seldom or never take them into the Mofussil; these are the parties to whom something of an approach to a *local* Flora, such as this is, would, at any time, be a great boon. With the exception of the mere elements of the study, Botany must necessarily be a sealed book to, at least, some of them; since most of the works from which any knowledge of the plants around them could be obtained, are, comparatively, very rare, in great request, and, therefore very expensive.

The want in Madras of such a work as this (though little more than a Catalogue) may be said to be proved by the ready sale which the First Edition met with.

It is in no way presumed that the *Supplement* at the end of the book completes the Flora of Madras and its neighbourhood. To include in this Manual most of the plants growing, or reported to be found in Madras, would

amount to nothing less than the compiling of a Flora of the Coromandel. We have simply added such plants found here, as we considered important, and which were not included in the First Edition.

Among Medicinal plants, mentioned in the Supplement, will be found—*Abelmoschus moschatus, Soymida febrifugæ, Toddalia aculeata, Guilandina Bonduc, Tylophora asthmatica and Hemidesmus Indicus.*

Of plants remarkable for their beauty, fragrance, &c., —the *Victoria Regia,* (only lately introduced) *Nelumbium speciosum Oxalis sensitiva, Oxystelma esculentum,* and *Polianthes tuberosa.*

Of plants yielding articles of food, or other substances used in the arts and manufactures,—*Œschynomene aspera* —Pith—Shola. *Trapa bispinosa*—Singhara nut, (only now being introduced.) *Guizotia oleifera,*—Oil. *Dœmia extensa,* —Fibre. Strychnos potatorum,—clearing nut. *Aristida setacea*—Broomgrass; and *Eleusine Œgyptiaca*—Famine corn.

Further, a few *natural orders,* not given in the Hand-Book have been added; as well as species of *indigenous* plants illustrative of some of the natural orders already contained in the original.

The great want of the student appears to us to be, not a great many plants, illustrating a few natural orders; but a few plants of as many natural orders as the locality will admit of.

The characters of the natural orders have been taken chiefly from Lindley, Balfour, Drury and Bennett; the descriptions of individual plants from Roxburgh, Drury and Wight.

In concluding, we have to tender our best thanks to Mr. R. Harvey for the kind help he has afforded us in the revision of this work.

FULL TITLES OF THE BOOKS QUOTED.

Balfour's Outlines of Botany, being an introduction to the Study of the Structure, Functions, Classification, and Distribution of Plants, by John Hutton Balfour, M.D., F.L.S., F.R.S.E., &c. Edinburgh, 1854.

Balfour's Class Book of Botany, being an introduction to the Study of the Vegetable Kingdom, by John Hutton Balfour, M.D., F.L.S., F.R.S.E., &c. Edinburgh, 1855.

Balfour's Cyclopædia of India and of Eastern and Southern Asia, Commercial, Industrial, and Scientific, &c. Edited by Edward Balfour, L.R.C.S.E., Surgeon, Madras Army, Madras, 1857.

Graham's Catalogue of the Plants growing in Bombay and its vicinity, &c. by John Graham, Bombay, 1839.

Hooker and Thomson's Flora Indica, being a Systematic Account of the Plants of British India, &c., by J. D. Hooker, M.D., R.N., F.R.S., &c. and Thomas Thomson, M.D., F.L.S., &c. I volume, London, 1855.

Lindley's Vegetable Kingdom, or, the Structure, Classification, and Uses of Plants, illustrated upon the Natural System, by John Lindley, PH.D., F.R.S. & L.S. &c. Third Edition, London, 1853.

Loudon's Encyclopædia of Plants, new edition, Edited by Mrs. Loudon, London, 1855.

Paxton's Botanical Dictionary, London, 1849.

Roxburgh's Flora Indica, 3 Vols. 1832.

Useful Plants of India, by Major Heber Drury, Madras Army, Madras, 1858.

Voigt's Hortus Suburbanus Calcuttensis, Calcutta, 1845.

Wight and Arnott's Prodromus Floræ Peninsulæ Indiæ Orientalis, by Robert Wight, M.D., F.L.S., &c. and G. A. Walker Arnott, A.M., F.L.S., & R.S. 1 Vol. London, 1834.

Wight's Illustrations of Indian Botany, 2 Vols. Madras.

Wight's Icones Plantarum Indiæ Orientalis, 6 Vols. Madras.

Hand-Book of the Indian Flora; By Lieut. Colonel Heber Drury.

Manual of Gardening for the Bengal and Upper India; By Thomas A. C. Firminger, M.A.

Class-Book of Botany; By Alphonso Wood, A.M., Boston.

English Index to the Plants of India; By H. Piddington.

Manual of Botany; By Robert Bentley, F.L.S., M.R.C.S.

Botanical Manuscripts; By Rev. Dr. Rottler.

Hortus Madraspatensis; By Dr. Hugh Cleghorn.

HAND BOOK

OF

TREES, SHRUBS, AND HERBACEOUS PLANTS,

GROWING IN THE

Madras Agri-Horticultural Society's Garden.

ORDER I. RANUNCULACEÆ. D. C. LIND.

THE CROW FOOT TRIBE.

Description.—The plants of this order are herbs, rarely shrubs, with an acrid watery juice, and generally with much-divided, exstipulate leaves, the petioles of which are dilated and sheathing. Sepals, 3-6, usually deciduous, sometimes deformed. Petals 3-15, sometimes anomalous, at other times suppressed. Stamens usually indefinite with adnate anthers. Carpels numerous, one celled, or united into a single, many-celled pistil. Fruit achenes, follicles, or baccate. Seeds anatropal, with horny albumen, and a minute embryo.

Properties.—They have narcotico-acrid properties, and are usually more or less poisonous. The acridity varies at different seasons, and in different parts of the plant; it is frequently volatilized by heat, and destroyed by drying.—*Balfour's Outlines of Botany; Wight's Ill. of Indian Plants.*

Distribution.—The species of this order are nearly all extra tropical. On the plains of India, only a few have as yet been found, but there are a considerable number natives of the higher hills. The following genera and species of this Natural Order are cultivated in the Agri-Horticultural Society's Gardens, Madras.

NARAVELIA, *DeCandolle.* From *Narawael,* its Singhalese name.

1. N. ZEYLANICA, *(D. C.)* Leaflets broadly ovate, shortly acuminated; achenia spirally twisted, hairy, with a long feathery tail; stalk longer than broad, glabrous.

This is a handsome climber, of easy culture; and has been found all over India.—*D. C. W. and A. Prod. p. 2. Hook. and Thom. fl. Ind. p.* 3.

DELPHINIUM, *(Linn.)* From *Delphin*, a dolphin, in reference to the supposed resemblance in the nectary of the plant to the imaginary figures of that animal.

2. D. AJACIS, (*Linn.*) Larkspur. An annual: stem erect, smoothish, nearly simple. Branches much covered with flowers. Pedicels length of bractes. Capsules pubescent.

Remarks.—This is a native of Switzerland but now naturalized in many parts of India. It flowers in the cold season. In cultivating it, the seed should be sown thinly in a middling sized pot, and allowed to flower there. This plant is supposed to be the Hyacinthus of Theocritus and Ovid.—*Gra. Cat. Loud. Encyc. of plants, p.* 472; *W. and A. Prod. p.* 4; *Jaffrey's hints.*

ORDER II. DILLENIACEÆ. D. C.

DILLENIA TRIBE.

Description.—Handsome flowering trees and shrubs, are the most prevalent forms in this order. Some of the former indeed, affording excellent timber; but the shrubs are usually climbing or prostrate, a few herbaceous plants also occur. The leaves are usually alternate, and exstipulate; coriaceous, with strong veins running straight from the midrib to the margin; peduncles solitary, or several springing together from tubercles on the branches, or forming terminal racemes or panicles. Flowers often yellow.

Properties.—The plants of this order are generally astringent. The fruit of most of the species of the genus *Dillenia* are acid and used by the natives of India, in their curries, while from the enlarged fleshy calyx of the ripe fruit, of one species, europeans occasionally prepare a tolerably pleasant jelly.

Distribution—There are about 200 known species which occur chiefly in Australasia, India, and in Equinoctial America.—*Wight's Ill.; Bal. Class book of Botany, p.* 749.

DILLENIA, *(Linn.)* Named after John James Dillenius, Professor of Botany at Oxford, and author of Historia Muscorum, &c.

3. D. SPECIOSA, (*Thunb.*) Leaves oblong, serrated, glabrous, appearing with the flowers: peduncles solitary, terminal, one-flowered: stamens all equal in length: styles and carpels about 20: Seed hairy.

Remarks.—This is a highly ornamental tree furnishing a durable timber. The fleshy leaflets of the calyx when the fruit is full grown, have

an agreeable acid taste and are much used by the natives in their curries. They make a pleasant jelly. The wood is both hard and tough: and according to Roxburgh, was used to make gun stocks.—*W. and A. Pro. p.* 5; *Roxb. fl. Ind.* II. p. 650; *Hook. and Thom. fl. Ind.* I. 69; *Bal. Cyclo. of Ind.*; *Wight's Icon. Fig.* 823.

DELIMA, *(Linn.)* From *Delimo,* to file or shave of; the leaves being used for polishing.

4. D. HEBECARPA, *(D. C.)* A climber with pretty white flowers, in terminal panicles.—*Hort. Cal. Delima sarmentosa, D. hebecarpa. H. and T. fl. Ind. p.* 71.

ORDER III. ANONACEÆ. JUSS.

CUSTARD APPLE TRIBE.

Description.—Trees or Shrubs with alternate, entire, exstipulate leaves, three persistent sepals, six petals in two rows, usually valvate in æstivation, sometimes combined, numerous stamens covering a large hypogynous receptacle, numerous carpels containing one or more ovules, a succulent, or dry fruit, consisting of a number of one or many-seeded carpels, distinct or combined seeds with a brittle spermoderm, ruminate albumen, and a minute embryo.

Properties.—Many of the species of this order abound in a powerfully aromatic secretion, which renders the flowers of some highly fragrant, the leaves of others give forth a grateful perfume, and the dried fruit of many is so highly aromatic as to vie with the spices of commerce; among these last is the Æthiopian Pepper of the shops, which is yielded by the fruit of *Uvaria (Xylopia) aromatica.* Of others of this order, the fruit is succulent and abounds in a delicate juice, which renders it a pleasant article of food; especially that of the Cherimoyer, which has the reputation of being the finest fruit in the world next to the Mangosteen.

Distribution.—The tropics of the Old and New World are the natural lands of these plants: from whence they have spread in a few instances, to the northward and the southward. Some of them, such as the Custard Apple, the Cherimoyer and others useful to man, have been carried by colonists far from their native countries. There are about 300 known species of Anonads.—*Bal. Outlines of Botany, p,* 395; *Bal. Cyclo. of Ind.*; *Lind. V. K. p.* 420; *Loud. Encylo. p.* 1055; *Wight's Ill., p.* 15.

ANONA, *(Linn.)* This is called by the Malays, *manoa;* and at Banda, *menona,* which it is presumed the Europeans have corrupted in to anona. As the word signifies in Latin food, it has been adopted by Linnæus in this sense, because of the habitual use made of the fruit by the Americans.—*Loud. Encyclo. p.* 480.

5. A. SQUAMOSA, *(Linn.)* Custard Apple. *Eng.* Seethapazham. *Tam.* Ata. *Beng*

Leaves narrow, oblong, obtuse, smooth. Fruit ovate, obtuse, squamose. Exterior petals lanceolate and obtuse; the inner scarcely any.

Remarks.—This species has long been naturalized in the East Indies. The fruit is delicious to the taste, and in the Dekhan on one or two occasions of famine has literally proved the staff of life to the natives. Dr. Royle says that the leaves of this plant have a heavy disagreeable odour, and the seeds contain a highly acrid principle fatal to insects, on which account the natives of India use them powdered and mixed with the flour of gram (*Cicer arietinum*) for washing the hair.—*Roxb. Fl Ind p.* 657; *Bal. Cyclo of Ind.*; *W. and A. Pro. p.* 7; *H and T. fl. Ind. p.* 115.

6. A. RETICULATA, (*Linn.*) Bullock's heart, or Bull's heart, *Eng.* Rama Seta pazham, *Tam.* Ram P'hul, *Hind.* Nona, *Beng.*

Leaves oblong, lanceolate, somewhat acute, smooth. Fruit ovate, lanceolate and obtuse.

Remarks.—This fruit tree grows to a large size. The fruit is so called from its fancied resemblance to the heart of the animal. The colour is dark brownish red. When ripe, it is a soft, sweetish pulpy fruit, but has not the fine flavor of the custard apple. It ripens from November to June, but is not much esteemed by Europeans. It was introduced from the West Indies, and is generally cultivated in native gardens in India and Burmah —*Roxb. fl. Ind.* II. *p.* 657; *W. and A. Prod. p.* 7; *Bal. Cyclo. of Ind.*; *H. and T. fl. Ind. p.* 115; *Gra. Cat. p.* 3.

7. A. MURICATA, (*Linn.*) Soursop. Moolloo Seetha, *Tam.*

Leaves ovate, lanceolate, smooth, somewhat shining. Peduncle solitary, one-flowered.

Remarks.—This fruit-tree also grows in India, but it is a native of the West Indies. It grows to about the same size as the Bullock's heart. The fruit is of a greenish colour when ripe, and has a rough thorny appearance: the flavour is very peculiar, differing from the other species of anona. The fragrance resembles that of black currants; and in the West Indies the fruit is considered very cooling in fevers. In India, the fruit ripens in March.—*Loud. Encyclo. of plants, p.* 480; *Bal. Cyc. of Ind.*

ARTABOTRYS, (*R. Brown.*) This name was suggested by the curious tendril belonging to the peduncle, by which the growing fruit is suspended on the nearest support; from *aratao*, to suspend, *botrys*, grapes.

8. A. ODORATISSIMUS, (*Br.*) Leaves ovate or oblong, lanceolate, glabrous, shining; peduncles glabrous: petals narrow-oblong, clothed with a rusty pubescence: carpels pyriform.

Remarks.—This is a climbing shrub, with fragrant blossoms, which diffuse an odour like the finer kinds of ripe fruit.—*W. and A. Prod. p.* 10; *Loud. Encyc. p.* 480; *H. and T. fl. and. p.* 128: *Uvaria odoratissima Roxb. fl. Ind.* II. *p.* 666.

GUATTERIA. (*Ruiz and Pavon.*) In honour of John Babtiste Guatteri, an Italian botanist, and once professor at Parma.

9. G. LONGIFOLIA, (*Roxb.*) Mast tree, *Eng.* Thavatharoo, Ashoga marum *Tam.* Asoka chettoo, *Tel.*

A tree: leaves linear-lanceolate, acuminated, undulated at the margin, glabrous, shining: peduncles long and slender, fascicled along the short lateral leafless shoots: petals equal, narrow lanceolate, acuminated, undulated: carpels ovoid.

Remarks.—This tree, about Madras and in other parts of India, is commonly cultivated for an ornamental tree; a distinction to which its elegant form justly entitles it, but its wood is said to be soft, and of little use.—*W. and A. Prod. p.* 10; *Wight's Ill. p.* 17; *Wight's Icon. Fig.* 1.; *H. and T. fl. Ind.* I. *p.* 139; *Uvaria longifolia. Roxb. fl. Ind.* II. *p.* 664.

ORDER IV. NYMPHÆACEÆ. SAL.

(2) WATER LILY TRIBE.

Description.—These are aquatic herbs with large showy flowers and cordate or peltate leaves arising from a prostrate rhizome, which is sunk in the mud. Sepals usually 4, persistent. Petals numerous, deciduous, inserted on a fleshy torus, and passing by a gradual transition out of the sepals into the stamens, which are numerous, have petaloid filaments, and are inserted into the torus. Ovary surrounded by the torus, many-celled, many-seeded, with radiating stigmas. Fruit indehiscent, pulpy when ripe, seeds anatropous, attached to spongy dissepiments; embryo small, in a vitellus, outside farinaceous albumen.

Distribution.—The Water-lilies chiefly inhabit quiet waters in the northern hemisphere; they are rare in the sourthern hemisphere.

Properties—The order possesses bitter, astringent, and some say narcotic properties. The plants contain much starch in their rhizomes which are used for food in the same way as potatoes.—*Balfour's Outlines of Botany, p.* 397.

NYMPHÆA, (*Linn.*) From *nymphe,* a water nymph; alluding to the habitation of the plants.

10. N. RUBRA, (*Roxb.*) Red flowered lotus, *Eng.* Ructa kumbula, *Beng.* The Rukta chunduna or. sundhuka, *Hind.* of Roxburgh.

Leaves sharply toothed, downy but not spotted beneath; lobes diverging; petiole intramarginal: flowers red, connective not prolonged, stigma 10-20-rayed.

Remarks.—A native of India. It flowers during the rains, and is found growing in tanks and ditches.—*Roxb. fl. Ind. II. p.* 576 ; *W. and A. Prod. p.* 17.

ORDER V. MENISPERMACEÆ. JUSS.

COCCULUS TRIBE.

Description.—Trailing shrubs with alternate, simple, usually entire leaves, and unisexual (often diœcious) flowers. Symmetry generally ternary. Stamens distinct or monadelphous, and attached to an androphore. Carpels supported on a gynophore, one-celled, containing a single curved ovule. Fruit drupaceous, one-celled, curved around a placental process. Seeds solitary and curved; embryo with the cotyledons coiled up in a peripherical form. The woody matter is often closely compacted in wedges, separated by large medullary plates, giving the stem a peculiar aspect on a cross section.

Distribution.—Menispermads are common in the tropical woods of Asia and America, and they climb among the trees to a great height. There are about 300 known species.

Properties.—The plants of this order have narcotic and bitter properties; some of them are very poisonous. *Anamirta paniculata* yields the bitter narcotic fruit known in commerce as Cocculus Indicus, and which has been said to be sometimes illegally used to impart bitterness to malt liquor.—*Bal. Outlines of Botany, p.* 395.

COCCULUS, (*DeCandolle.*) Derived from *Coccus*, the systematic name of the cochineal; given to this genus because most of the species bear scarlet berries.

11. C. CORDIFOLIUS, (*D. C.*) Heart-leaved cocculus, *Eng.* Gulunclia, *Hind.*

Twining; bark corky, slightly tubercled: leaves roundish, cordate with a broad sinus, shortly and sharply pointed, glabrous: racemes axillary or lateral; of male flowers longer than the leaves, pedicels several together; of female scarcely so long as the leaves, pedicels solitary: petals unguiculate; unguis linear, slightly margined upwards; limb triangular-ovate, reflexed: stamens 6; filaments thickened at the apex; anther-cells divaricating: ovaries 3: drupes 2-3, globose: embryo small, cotyledons orbicular, approximate, fleshy.

Remarks.—This is one of the most common and valuable plants in India. The root is large, soft, and spongy, and when fresh is used extensively by the natives of Bengal being mixed with sour rice gruel, and sugar, in the treatment of ailments.—*W. and A. Prod. p.* 12 ; *Bal. Cyc. of Ind.*

ORDER VI. PAPAVERACEÆ. JUSS.

(3) POPPY TRIBE.

Description.—Herbs with milky or coloured juice, and alternate, exstipulate leaves, sepals two, rarely three, caducous. Petals four, rarely six, usually crumpled in æstivation, Stamens, 8-24 or more. Fruit unilocular, siliquæform (pod-like), with 2-5 parietal placentas, or capsular, with numerous placentas. Seeds numerous, with embryo in the midst of fleshy and oily albumen.

Distribution.—This order is chiefly confined to Europe. There are 130 known species.

Properties.—The narcotic properties possessed by the Poppy, are familiar to all, and this character prevails generally in the order. The seeds are universally oily and generally in no degree narcotic. The oil obtained from the seeds of Papaver somniferum is perfectly wholesome, and is, in fact, consumed on the continent in considerable quantity. It is also said to be employed extensively to adulterate olive oil.—*Bal. Out. of Bot. p.* 399 ; *Lind. V. K. p.* 431.

ARGEMONE, (*Linn.*) From *argema*, the name by which the disease cataract of the eye was known, and which was thought to be cured by this plant.

12. A. MEXICANA. (*Linn.*) Yellow Mexican Thistle, *Eng.* Brumadundoo, *Tam.* Bruhmadundie, *Tel.* Burooshial kant, *Beng.*

Leaves deeply repand-sinuate, blotched with white : flowers solitary : calyx glabrous, prickly : petals 4-6 : stigmas 4-5 ; capsules prickly, 4-5 valved. Seeds roundish : flowers yellow.

Remarks—This is an annual, abundant all over India, easily recognized by its prickly thistle-like leaves, and bright yellow flowers. It is a native of South America, now naturalized and exceedingly common about Madras ; the seeds have been said to be used in Jamaica as an emetic. Barton describes them as being more narcotic than opium. An oil is also expressed from them, of which samples were produced at the Madras Exhibition of 1855. It is cheaply procurable in the bazaars, and is used chiefly for lamps. The juice, which exudes on wounding or bruising this plant, is of a bright yellow colour, and is used by the natives as an application to indolent ulcers, and to remove specks on the cornea.—*W. and A Prod. p.* 18 ; *Bal. Cyclo. of Ind.?; Wight's Illustr.* 11 ; *Roxb. fl. Ind.* II. *p.* 561 ; *Hook. and Thom. fl. Ind* I. *p.* 251.

ORDER VII. CRUCIFERÆ. JUSS.

(4) CRUCIFEROUS TRIBE.

Description.—Herbaceous plants with alternate, exstipulate leaves, racemose or corymbose flowers, usually yellow or white, and an ebracteated inflorescence. Sepals four, deciduous. Petals four, cruciate. Sta-

mens tetradynamous. Fruit a siliqua or silicula. Seeds albuminous; embryo with the radicle folded on the cotyledons.

Distribution.—The plants are very generally distributed, but abound in cold and temperate regions, especially in Europe.

Properties.—Crucifers are antiscorbutic and pungent, and occasionally acrid in their properties. None of them are poisonous. The order contains many of the culinary vegetables in constant use; such as Cabbage, Cauliflower, Turnip, Radish, &c. The well known condiment Mustard (*Sinapis*) also belongs to this order. The plants have much nitrogen and sulphur in their composition.—*Bal. Out. of Bot. p.* 400.

Lepidium, *(Linn.)* From *lepis*, a scale; in allusion to the shape of the pods, which appear like little scales.

13. L. sativum, *(Linn.)* Garden Cress, *Eng.* Halim, *Beng. Hind.*

The Seeds, Aleverei, *Tam.* Adala vittiloo. *Tel.*

Pods orbicular winged, leaves variously divided and cut, branches not spiny: flowers white.

An annual, native of Persia, is generally cultivated all over India; and well known as an excellent ingredient in salads. The seed is of a reddish colour, agreeable warm taste, and is used by the native physicians as a gentle stimulant. Bruised and mixed with lime juice, it is deemed useful for checking local inflammation.—*Loud. Encyclo. p.* 552; *Jaffrey's hints*; *Bal. Cyc. of Ind.*; *Wight's Illustr. Fig.* 12; *Arabis Chinensis, Ain. Mat. Ind.*

Brassica, *(Linn.)* From *bresic*, the Celtic name of the Cabbage.

14. B. oleracea, *(Linn.)* Cabbage.

The Cabbage and its congeners, the Cauliflower, Brocoli, Knol Kohl, Brussel's Sprouts, and Savoy, being well known as culinary vegetables, do not require any lengthened notice. For culture *see Jaffrey's hints, p.* 37.

15. B. rapa, *(Linn.)* Turnip.

Raphanus, *(Linn.)* From *ra*, quickly, and *phainomai*, to appear; in allusion to the speedy germination of the seeds.

16. R. Sativus, *(Linn.)* Radish.

This plant is familiar to all as one of the ingredients in the making of a salad, the seed pods when young are said to make excellent pickles.—*Jaffery's hints.*

Order VIII. CAPPARIDACEÆ. Lind.

Caper Tribe.

Description.—Herbs, shrubs, or trees, with alternate leaves and tetramerous flowers: allied to crucifers, but distinguished by the stamens

being often indefinite, and if six, scarcely ever tetradynamous, by the want of a replum in the one-celled ovary, which is often supported on a gynophore, and by their reniform seeds.

Distribution.—Capparids are chiefly found in the tropics and in countries bordering upon them, where they abound in almost every direction. There are about 340 species.

Properties.—In their properties, Capparids resemble crucifers. They have pungent, stimulant, and antiscorbutic qualities. *Capparis spinosa* in the southern parts of Europe, *C. rupestris* in Greece, *C. Fontanesii* in Barbary, and *C. ægyptiaca* in Egypt, supply capers, which are the flower-buds of the plants.—*Bal. Out. of Bot. p.* 401; *Lind. V. K. p.* 357; *Wight's Illustr.* 1, *p.* 33.

GYNANDROPSIS, *DeCandolle.* From *gyne*, a female, *aner, andros*, a male, and *opsis*, resemblance; the stamens appear as if inserted on the top of the ovary.

17. G. PENTAPHYLLA, D C. Five leaved Gynandropsis, Valay, *Tam.*

Stem more or less covered with glandular pubescence or hairs: middle leaves 5-foliate, lower and floral leaves trifoliate: leaflets obovate, puberulous, quite entire or slightly serrulated: flowers white.

This is a common weed, the leaves of which are used as greens in soups, &c.—*W. and A. Prod. p.* 21; *Jaffrey's hints, p.* 52.

CLEOME, *Linn.* From *kleio*, to shut; alluding to the parts of the flower.

18. C. MONOPHYLLA, (*Linn.*) Herbaceous, glabrous: leaves simple, petioled, lanceolate, obtuse or slightly cordate at the base; peduncles solitary; siliqua puberulous, terete, striated, acute at the base, but almost quite sessile, acuminated with the subulate style; torus inconspicuous.—*W. and A. Prod. p.* 21.

POLANISIA, *Rafin.* From *polus*, many, and *anisos*, unequal; stamens numerous and unequal.

19. P. CHELIDONII, D. C. Rose coloured Polanisia. Stem hispid with scattered short prickly hairs, otherwise glabrous: leaves 7-9 foliate; leaflets obovate or oblong, cuneate, hispid with a close pressed rigid pubescence, scarcely so long as the petiole; upper floral leaves minute: stamens numerous (24-32)

filaments club-shaped ; siliqua glabrous, terete, sessile.—*W. and A. Prod, p.* 22 ; *Wight's Icones, Fig.* 319.

20. P. ICOSANDRA (W. and A.) Stem covered with viscid glandular hairs : leaves 3-5 foliate ; leaflets obovate, cuneate or oblong, pubescent, scarcely longer than the petiole : stamens about 20 ; siliqua terete, striated, rough with glandular hairs, sessile, acuminated.

This is a common weed. The leaves are said to be medicinal.—*W. and A. Prod. p.* 22 ; *Wight's Icon. Fig.* 2.

CRATÆVA, (*Linn.*) After Cratævus a Greek botanist, who lived in the time of Hippocrates.

21. C. ROXBURGHII, (*Br.*) Three leaved Caper tree, Mavoolinga marum, *Tam.* Maredoo Chettoo, *Tel.*

Leaflets ovate, tapering at the base, suddenly acuminated ; lateral ones unequal at the base : limb of the petals roundish ovate : stamens numerous (16—20 or more) : torus hemispherical : berry globose.

Remarks.—This is a small tree, flowers at the beginning of the hot season when it has a very pretty appearance. Common about Madras.—*W. and A. Prod. p.* 23 ; Capparis trifoliata ; *Roxb. fl. Ind.* II. *p.* 571 ; *Bal. Cyc. of Ind.*

22. CADABA INDICA, (*Lam.*) Indian Cadaba, Chemoorda, *Teling.*

Without thorns : leaves from elliptic-oblong to broad-lanceolate, mucronate, glabrous : torus tubular, mouth oblique, widening, toothed : petals and stamens 4 : seeds immersed in firm pulp.

A straggling shrub, in flower most of the year.—*W. and A. Prod. p.* 24 ; *Strœmia tetrandra ; Roxb. fl. Ind.* II. *p.* 78.

CAPPARIS, (*Linn.*)—So called from the Arabic *kapar*, capers.

23. C. HORRIDA, (*Linn.*) Thorny caper Bush. Catallikai also Adondei, *Tam.* Aradoonda. *Tel.*

Remarks.—This is a large thorny climbing shrub. Flowers largish, white, becoming rose coloured, common in almost every hedge.—*W. and A. Prod. p.* 29. *Hort. Cal. p.* 74; *Bal. Cyc. Capparis Zeylanica*; *Roxb*; *fl. Ind.* I. *p.* 567; *Wight's Icones, Fig.* 173.

Order IX. RESEDACEÆ, D. C.

Mignonette Tribe.

Description.—Soft herbaceous plants, rarely shrubs, with alternate leaves having minute glands at their base, and racemose or spiked inflorescence. Sepals 4-7, sometimes united. Petals 2-7, lacerated and unequal, with broad or thickened claws. Stamens definite, inserted on a fleshy disk. Fruit usually one-celled, opening early at the apex, with 3-6 parietal placentas; sometimes it appears as carpellary leaves surrounding a central placenta. Seeds several, reniform, or curved, and exalbuminous; embryo arcuate.

Distribution.—The plants of this order chiefly inhabit Europe and the adjoining parts of Asia and Africa. There are 41 known species.

Properties.—Unimportant.

Reseda, (*Linn.*) From *resedo,* to calm or appease; the Latins considered its application useful in external bruises.

24. R. odorata, (*Linn.*) Mignonette.

Remarks.—This annual is well known as among the most fragrant of plants, and on that account notwithstanding its very unpretending flowers, it has received in France the pretty name of *Herb d'amour*. It is a native of Italy. Flowers during the cold season. Plants raised from English seed are stronger and more fragrant than those from seed gathered in this country.

Order X. FLACOURTIACEÆ or BIXACEÆ, Lind.

Arnotto Tribe.

Description.—Shrubs or small trees, with alternate exstipulate leaves, often marked with round transparent dots, sepals and petals 4-7, the later sometimes wanting. Stamens, same number as petals or a multiple of them. Ovules attached to parietal placentas. Fruit one-celled, either fleshy and indehiscent, or a 4-5 valved capsule containing pulp, in which numerous albuminous seeds are enveloped.

Distribution.—The plants of this order are almost entirely natives of the hottest parts of the East and West Indies, and Africa. There are 90 known species.

Properties.—Some of the plants of the order are bitter and astringent, others yield edible fruits.—*Bal. Out. of Bot. p.* 402; *Lind. V. K. p.* 327.

Bixa, (*Linn.*)—Its name in South America.

25. B. Orellana, (*Linn.*) Arnotto. Murginatie marum and Sapprah marum. *Tam.* Latkan, *Hind. and, Beng.*

Leaves cordate, ovate, acuminated, entire or angular, free from scales on both surfaces; Fruit nearly globose : flowers white.

Remarks.—It is this plant which yields *Arnotto,* in France called *Rocou,* which is the pulp of the seeds. Farmers use it to stain their cheeses, and dyers to obtain a reddish colour. The dye of the Indian variety is neither so abundant, nor so good, as that from the W. Indies; where also the bark of the plant is used as a cordage material. Cultivated in India.—*W. and A. Prod. p.* 31 ; *Roxb. fl. Ind.* II. *p.* 581 ; *Hort. Cal. p.* 85 ; *Bal. Cyc. of Ind.* ; *Wight's Illustr. Fig.* 17.

ORDER XI. VIOLACEÆ, LIND.

VIOLET TRIBE.

Description.—Herbs or shrubby plants, with usually alternate, stipulate leaves, having an involute vernation, and flowers often irregular. Sepals five, persistent, attached above their base. Petals five, often unequal, one being spurred. Stamens five, with short and broad filaments, which are often elongated beyond the introrse anther lobes ; in the irregular flowers two of the stamens have appendages ; anthers sometimes united. Style declinate, with an oblique hooded stigma. Fruit a three-valved capsule, with parietal placentas in the middle of the valves (loculicidal). Seeds definite or indefinite, albuminous, anatropal, with a straight embryo. There are two sub-orders :—1 Violeæ, with irregular flowers, occurring chiefly in Europe, Siberia, and America ; 2. Alsodeæ, with regular flowers, principally found in South America and Africa. There are upwards of 300 known species.

Properties.—The violet-worts are generally emetic, and some have purgative properties. In the root of many of them a principle called Violin, similar to emetine, has been found.—*Bal. Class Book, p.* 762 ; *Lind. V. K. p* 338 ; Violarieæ. *Wight's Illustr. p.* 40.

VIOLA, (*Linn.*) Latin name of the flowers.

26. V. ODORATA. (*Linn.*) Sweet Violet.

Remarks.—This plant is a universal favorite and is generally cultivated for its fragrant flowers ; succeeds well at Madras and flowers freely, flowering in the cold season. Native of Europe, Siberia, and China. —*Bal. Cyclopædia of India ; Hort. Cal. p.* 76.

I. IONIDIUM, (*Ventenat.*) From *ion*, a violet, and *eidos*, resemblance.

27. I. SUFFRUTICOSUM, (*Ging.*) Stems pubescent, branch-
[illegible]e ; branches nearly simple : lower leaves the
CAPPARIS, (L. [illegible]es oblong lanceolate, mucronate, more or less
23. C. HORR[illegible] or serrated ; stipules subulate : sepals narrow,
also Adhendei, *Tam.* [illegible] keeled : lower petal nearly orbicular, obtuse,

ong-unguiculate: capsule nearly globose: seeds 9, obovoid, shining (whitish), longitudinally furrowed. Madras and elsewhere, not uncommon.—*W. and. A. Prod. p.* 32; *Hort. Cal. p.* 77; *Wight's Icon. Fig.* 388; Viola suffruticosa; *Roxb. fl. Ind.* I. *p.* 649.

Order XII. TAMARICACEÆ, Lind.

Tamarisk Tribe.

Description.—Shrubs or herbs, usually growing by the sea side, with entire, scale-like leaves, and spiked or racemose flowers. Calyx 4-5, parted, persistent Petals 4-5, withering, imbricate. Stamens 4-5, or twice that number, free or united, anther introrse, opening longitudinally. Styles three. Fruit, a three-valved, one-celled capsule, with three basal or parietal placentas, bearing numerous anatropal, comose, exalbuminous seeds, embryo straight.

Distribution.—The species abound in the basin of the Mediterranean, and are confined to the northern hemisphere of the Old World. The known species, amount to 43.

Properties.—Tamarisks have an astringent, and slightly bitter and tonic bark. Those growing close to the sea abound in salts of soda.—*Bal. Out. of Bot. p.* 405; *Lind. V. K.* 343.

Tamarix, (*Linn.*)—So named on account of the plants growing on the banks of the Tamaris, now Tambro, on the borders of the Pyrennees.

28. T. Gallica, (*Linn.*) Tamarisk; young branches glabrous: leaves amplexicaul, glabrous: *stamens* 5; *torus* 10-toothed: styles 3, longish: capsules attenuated (not turgid.)

Remarks.—The manna of Mount Sinai is produced by a variety of this plant: it consists wholly of pure mucilaginous sugar. Flowers rose-coloured.—*W. and A. Prod. p.* 40; *Hort. Cal. p.* 179; *Gra. Cat. p.* 11; *Wight's Illustr. Fig.* 24; Tamarix Indica; *Roxb. fl. Ind.* II. *p.* 100.

29. Trichaurus ericoides, (*Arn.*) Heath-like Trichaurus. —*W. and A. Prod. p.* 40; *Gra. Cat. p.* 11; *Wight's Icon. Fig.* 22.

Order XIII. CARYOPHYLLACEÆ, Lind.

Chickweed Tribe.

Description.—Herbaceous plants, with stems tumid at the articulations, entire, opposite leaves, and cymose inflorescence. Sepals 4-5, distinct or united. Petals unguiculate, sometimes wanting. Stamens as many as the petals, sometimes fewer. Ovary often supported on a gynophore, usually one-celled, with a free central placenta. Styles 2-5, papillose on their inner surface. Fruit a capsule opening by 2-5 valves, or by teeth at the

apex, which are twice as many as the stigmas. Seeds usually indefinite, embryo curved round mealy albumen.

Distribution.—Natives principally of the temperate and frigid parts of the world, where they inhabit mountains, hedges, rocks, and waste places.

Properties.—The species are in general markedly insipid.—*Bal. Out. of Bot. p.* 406 ; *C. Lind. V. K. p.* 495.

DIANTHUS, (*Linn.*) From *dios*, divine, and *anthos*, a flower ; in reference to the fragrance of the blossoms, and the unrivalled neatness of the flowers.

30. D. CARYOPHYLLUS, (*Linn.*) Clove Carnation.

Remarks.—Of this plant there are many varieties, all much esteemed for the fragrance of their flowers. They succeed pretty well in the Madras gardens, so long as they are kept young, but degenerate soon if not propagated annually. This is done by pipings.—*Jaffrey's Hints, p.* 24.

31. D. CHINENSIS. (*Linn.*) China pink. Flowers solitary, scales of the calyx subulate, expanded, as long as the tube.

Remarks.—A native of China, but succeeds well in India, the double flowered varieties are much esteemed ; flowers white, red, crimson, red and crimson striped.—*Roxb. fl. Ind.* II. *p.* 446 ; *Hort. Cal. p.* 175 ; *Gra. Cat. p.* 245 ; *Bal. Cycl. of Ind.*

CERASTIUM, (*Linn.*) From *keras*, a horn ; because many of the species have capsules like the horn of an ox.

32. C. INDICUM. (*W. and A.*) Indian chickweed.—*W. and A. Prod. p.* 43 ; *Wight's Illustr. Fig.* 26.

MOLLUGO. (*Linn.*) Said to be a name in Pliny, latinized by Linnæus.

34. M. PENTAPHYLLA. (*Linn.*) Five leaved Molluga. Flowers small, white.—*W. and A. Prod. p.* 44 ; *Hort. Cal. p.* 180 ; *Gra. Cat. B. pl. p.* 12 ; *Roxb. fl. Ind.* I. *p.* 359.

35. M. TRIPHYLLA, (*Lour.*) Three-leaved Molluga ; an annual ; flowers, small, white.—*W. and A. Prod. p.* 41 ; *Hort. Cal. p.* 180 ; *Roxb. fl. Ind.* I. *p.* 363 ; *Gra. Cat. of B. pl. p.* 12.

ORDER XIV. MALVACEÆ, JUSS.

MALLOW TRIBE.

Description.—Herbs, shrubs, or trees, with alternate, stipulate, palmately divided leaves, often stellate hairs and showy involucrate flowers

on axillary peduncles. Sepals five, rarely three or four, united at the base, valvate, often having an epicalyx. Petals of the same number as the sepals, twisted. Stamens indefinite, monadelphous, united to the claws of the petals; anthers one-celled, reniform, introrse, opening transversely; pollen hispid. Ovary many-celled, with placentas in the axis; or several ovaries, separate or separable when ripe; styles equal in number to the carpels, distinct or united. Fruiit composed of several monospermal or polyspermal carpels, either combined or separate. Seeds with little albumen; embryo curved with folded cotyledons.

Distribution.—The plants of this order are found in great abundance in the tropics, plentifully in hotter parts of temperate regions, but gradually diminishing to the north. There are one thousand known species.

Properties.—The uniform character of the *Malvaceæ* is that of abounding in mucilage, and an entire absence of deleterious properties. The peculiar properties are noticed under the several species.—*Bal. Out. of Bot. p.* 407; *Lind. V. K. p.* 368; *Wight's Illustr. p.* 35.

MALVA, (*Linn.*) Altered from the Greek, *malache*, soft, which comes from *malacho*, to soften; in allusion to the emollient qualities of the species.

35. M. MAURITIANA. (*Linn.*) Ivy-leaved Mallow. Annual, stems erect, herbaceous: leaves cordate, with five obtuse lobes: petioles nearly glabrous, or tomentose on their upper side: pedicels several together, axillary 1-flowered: bracteoles 3, ovate, obtuse: corolla (purple) much longer than the calyx, carpels wrinkled on the back.

Remarks.—An annual: flowers largish, dark-purple. Found native in Spain, Italy, and Portugal.—*W. and A. Prod. p.* 45; *Hort. Cal. p.* 112; *Gra. Cat: B. pl. p.* 12.

ALTHÆA, (*Linn.*) Derived from *altheo*, to cure; from the medicinal qualities of some of the species.

36. A. ROSEA (*Cav.*) Hollyhock. This plant is the parent of the many beautiful varieties of hollyhock, yields a blue colouring matter equal to indigo. The plant is used medicinally. A native of China.—*Hort. Cal. p.* 112; *Gra. Cat. B. pl. p.* 12.

37. A. ROSEA, *varieties* alba, (white) purpurea (purple), and atrorubens, (dark red hollyhock) are all varieties of *A. rosea*, commonly cultivated.

URENA, (*Linn.*) From *uren*, its name in Malabar.

38. U. LOBATA, (*Linn.*) Angular-leaved Urena. Bun-okra, *Beng.*

Perennial, bushy. Leaves-round cordate, angled. Capsules glochidiate.

Remarks—This plant yields an excellent fibre.—*Roxb. fl. Ind.* III. *p.* 182; *W. and A. Prod. p.* 46; *Hort. Cal. p.* 112; *Gra. Cat. B. pl p.* 13; *Bal. Cycl. of Ind.*

HIBISCUS, (*Linn.*) The name is derived from *ibis*, a stork, which is said to feed on some of the species of this genus.

39. H. VESICARIUS, (*Cav.*) Leaves toothed, lower ones undivided, upper one 5 cleft, the lobes oblong, obtuse and nearly equal in size.

Remarks.—This plant is said to yield a good fibre. It is an annual, with cream-coloured flowers, and a dark purple eye.—*W. and A. Prod. p.* 48; *Hort. Cal. p.* 116: *Gra. Cat. p.* 13; *Bal. Cyc. of Ind.*

40. H. SURRATTENSES, (*Linn.*) Prickly stemmed Hibiscus. Casulekeerie, *Tam.*

Herbaceous, erect growing plant; stems dotted with brown specks; armed with recurved prickles; flowers light yellow.

Remarks.—The leaves are used as greens.—*Gra. Cat. B. pl. p* 13; *W. and A. Prod. p.* 48; *Roxb. fl. Ind.* III. *p.* 295; *Hort. Cal. p.* 116; *Wight's Icon. Fig.* 197; *Jaffrey's Hints.*

41. H. ROSA SINENSIS, (*Linn.*) Shoe-flower. Sapatoo poo cheddie, *Tam.* Joba, Juva, Oroo, *Beng.*

Shrubby. Leaves ovate cordate, grossly-serrate, lucid Stipules ensiform. Flowers axillary. Exterior calyx of from si[x] to eight linear leaflets.

Remarks.—This plant is common in most gardens; the leaves are use[d] as emollients. The flowers are deep scarlet, and yield a juice which turn rapidly to a dark purple, and is very mucilaginous; they are sometime used as a substitute for shoe blacking, whence the English name. Nativ[e] of China, Molluccas and interior of Hindoostan.—*Roxb. fl. Ind.* III. *p.* 194; *W. and A. Prod. p.* 49; *Hort. Cal. p.* 116; *Gra. Cat. p.* 13; *Bal. Cyclo. of Ind.*

42. H. ROSA-SINENSIS. *β rubro-plenus*; double red.—*Hort. Cal. p.* 117.

43. H. ROSA SINENSIS γ. *flavo-plenus ;* double yellow.—*Hort. Cal. p.* 117.

44. H. ROSA SINENSIS δ. *carneo-plenus ;* double flesh coloured.—*Hort. Cal. p.* 117.

45. H. LILIFLORUS, (*Cav.*) Lily flowered Hibiscus.—*Hort. Cal. p.* 117.

46. H. LILIFLORUS γ. *luteus ;* flowers buff coloured.—*Hort. Cal. p.* 117.

47. H. SYRIACUS. (*Linn.*) Syrian Hibiscus. Native of Syria and Carniolia. Cultivated in India. Flowers large, purplish lilac, with dark purple eye.—*Roxb. fl. Ind.* III. *p.* 195 ; *Hort. Cal. p.* 117 ; *Gra. Cat. p.* 246.

48. H. SYRIACUS, PLENUS. Double flowering, Syrian Hibiscus.

49. H. CANNABINUS. (*Linn.*) Hemp leaved Hibiscus. Passerie Koray, *Tam.* Ghongoo koora, *Tel.* Mesta-pato ; Nalkee ; Pulooa, *Beng. and Hind.* Stem herbaceous, glabrous, prickly : leaves palmately 5 partite, glabrous ; segments narrow lanceolate, acuminated, serrated ; middle nerve with a gland beneath : flowers almost sessile, axillary : leaves of the involucel about 9, subulate, prickly with rigid bristles, shorter than the undivided portion of the calyx : calyx divided beyond the middle ; segments lanceolate subulate, slightly prickly, 1 nerved, with a large gland about the middle of each nerve : corolla spreading : fruit nearly globose, acuminated, very hairy : seeds glabrous.

Remarks.—This plant is commonly cultivated all over India. The leaves are acidulous and eaten by the natives as a spinach. The fibres of the bark are used as a cordage material, and sold as one of the hemps of India. Flowers large, sulphur coloured, with a dark brown eye.—*W. and A. Prod. p.* 50 ; *Roxb. fl. Ind. p.* 208 ; *Hort. Cal. p.* 117 ; *Gra. Cat. p.* 13 ; *Bal. Cyclo. of Ind.*

50. H. MUTABILIS, PLENUS. Double flowering, changeable rose Hibiscus. Thulpudmo, *Beng.*

Remarks.—A large shrub, native of China, remarkable for the changes

which occur in the colour of its flowers during the day.—*Roxb. fl. Ind.* III. *p.* 201; *Hort. Cal. p.* 118; *Gra. p.* 13.

51. H. SABDARIFFA, (*Linn.*) *Roselle* plant, or *Red Sorrel* of the W. Indies. Kaserika, Poolychay keera, also Sheemay kashlee-keeray, *Tam.* Yera googoo, *Tel.* Mesta, *Beng.*

Annual, glabrous: lower leaves undivided: upper palmately 3-5 lobed, cuneate and entire at the base: lobes oblong lanceolate, acuminated, toothed: flowers axillary, solitary, on very short pedicels: involucel—segments about 12.

Remarks.—This plant is cultivated in most gardens, because its calyces as they rippen become fleshy, or of a pleasantly acid taste, and are much employed for making tarts, as well as an excellent jelly. The leaves are used as greens. Flowers large, pale sulphur, with a dark brown eye.—*W and A. Prod. p.* 52; *Hort. Cal. p.* 118; *Gra. Cat. p.* 14; *Bal. Cyclo. of Ind. Jaffrey's Hints.*

ABELMOSCHUS, (*Med.*) From the Arabic *Habb-ul musk,* a grain of musk.

52. A. ESCULENTUS, (*W. and A.*) Benoakai or esculent okra *Eng.* Vendei, *Tam.* Benda, *Tel.* Ramturay or Dhenroos, *Beng.* Stem herbaceous, hairy, without prickles: leaves on longish petioles, cordate, with 3-5 obtuse lobes, strongly toothed, scabrous on both sides, with short appressed rigid hairs; pedicels very short: involucel-leaves 10, deciduous: capsule pyramidal, elongated acuminated.

Remarks.—The seed pods of this plant when young are an excellent esculent. The plant is generally cultivated; and when grown in rich soil the pods are considerably improved in quality. Flowers large, sulphur yellow, with a dark blood-coloured eye.—*W. and A. Prod. p.* 53; *Jaffrey's Hints.*; *Bal. Cyclo. of Ind.*; *Hort. Cal. p.* 118; *Gra. Cat. p.* 14.

53. A. FICULNEUS, (*W and A.*)

Remarks.—The bark of this plant contains a large proportion of white reticulated fibre similar to that obtained from the mulberry. Flowers white, with a rose coloured eye.—*W. and A. Prod. p.* 53; *Bal. Cyclo. of Ind.*; *Hort. Cal. p.* 119; *Gra. Cat. p.* 14; Hibiscus prostratus; *Roxb. fl. Ind.* III *p.* 208.

THESPESIA, (*Corr.*) So named from *thespesios,* divine, the tree being frequently planted about churches.

54. T. POPULNEA, (*Corr.*) Portia tree. Poorsha or Poovershα, *Tam.* Gungarauvee, *Tel.* Poresh, *Beng.* Young parts, and leaves beneath, sprinkled with minute rusty-coloured scales; leaves roundish cordate, acuminated, 5-7-nerved, with pores beneath at the base between the nerves: pedicels about as long as the petioles.

Remarks.—This tree is much used for forming avenues, and planting along the sides of roads, for which purposes it is well adapted from its ornamental appearance, and affording a good shade. It furnishes a strong and durable timber, but rarely to be met with good, owing to the trees rotting in the heart; it grows best near the coast. Flowers large, sulphur yellow, with a blood coloured eye. It is a native of the Society Islands, Guinea, Courtallum, Singapore, and Bengal.—*W. and A. Prod. p.* 54; *Hort. Cal. p.* 120; *Gra. Cat. p.* 14; *Bal. Cyclo. of Ind.*; *Wight's Icon. Fig.* 8; *Hibiscus* populneus; *Roxb. fl. Ind.* III. *p.* 190.

GOSSYPIUM, (*Linn.*) So named from the Arabic, *goz* or *gothn*.

It is from the various species of this genus that the well-known Cotton wool is obtained.

55. G. HERBACEUM, (*Linn.*) Country Cotton.—*Roxb. fl. Ind.* III. *p.* 184; *Hort. Cal. p.* 121; *Wight's Icon. Fig.* 9; *Bal. Cyclo. of Ind.*

56. G. RELIGIOSUM, (*Linn.*) Nankin Cotton plant.—*W. and A. Prod. p.* 55; *Roxb. fl. Ind.* III. *p.* 185; *Gra. Cat. of B. pl. p.* 15; *Hort. Cal. p.* 121; *Bal. Cyclo. of Ind.*

57. G. BARBADENSE, (*Linn.*) Barbadoes Cotton.—*Roxb. fl. Ind.* III. *p.* 187., *Hort. Cal. p.* 128; *Bal. Cyclo. of Ind.*; *Wight's Illustr. Fig.* 28.

58. G. ACUMINATUM, (*Roxb.*) Brazil Cotton plant.—*Roxb. Fl. Ind.* III. *p.* 186; *Hort. Cal. p.* 120; *Bal. Cyclo. Wight's Illustr. Fig.* 27.

ABUTILON, (*Mœnch.*)

59. A. TOMENTOSUM (*W. and A.*) Tomentose Abutilon.—*W. and A. prod. p.* 56; *Hort. Cal. p.* 114, *Sida tomentosa*; *Roxb. Fl. Ind.* III. *p.* 178.

Order XV. STERCULIACEÆ. Vent.

Sterculia or Silk Cotton Tribe.

Description.—Shrubs, or large trees with simple or compound leaves and occasionally unisexual flowers, resembling the Malvaceæ in their general characters, particularly in their columnar stamens but differing in their two-celled extrorse anthers.

Distribution.—Nearly all the known species are tropical, or at least natives of very warm climates. They are extensively scattered over the world, the Sterculeæ preferring India and Africa, the Bombaceæ America. The Baobab trees are from Senegal, where they are remarkable for their enormous size and prodigious longevity, estimated but no doubt incorrectly, to amount in certain instances, to some thousands of years.

Properties.—The Sterculiads resemble the Malvaceæ in their properties.—*Bal. Out. of Botany, p.* 408 ; *Lind. V. K. p.* 360.

Tribe I. Bombaceæ. Leaves palmate or digitate. Flowers perfect.—*Lind. V. K. p.* 361.

Adansonia, (*Linn.*) Dedicated to Michael Adanson, a celebrated French botanist.

60. A. digitata, (*Linn.*) Baobab, monkey bread, Ethiopian Sour-gourd or Lalo tree. Papara Poolia marum, *Tam.*

Remarks.—This is one of the largest trees in the world, its trunk being sometimes 30 feet in diameter: but its height is not in proportion. It is emollient and mucilaginous in all its parts. The leaves dried and reduced to powder constitute Lalo, a favourite article with the Africans, which they mix daily with their food, for the purpose of diminishing the excessive perspiration to which they are subject in those climates; and even Europeans find it serviceable in cases of diarrhœa, fevers, and other maladies. The fruit is perhaps the most useful part of the tree. Its pulp is slightly acid and agreeable, and frequently eaten; while the juice expressed from it, when mixed with sugar, constitutes a drink which is valued as a specific in putrid and pestilential fevers. The dried pulp is mixed with water and administered, in Egypt, in dysentery. It is chiefly composed of gum, like Gum Senegal, a sugary matter, starch, and an acid which appears to be the malic. Along the sea-coast of Guzerat, the fishermen use the large fruit as a float for their nets. It is a native of Senegal, but cultivated in India at Samulcotta, Madras, Negapatam, Bombay, Guzerat, &c. Flowers very large, white.—*Lind. V. K. p.* 361 ; *Hort. Cal. p.* 106; *W. and A. Prod. p.* 60; *Wight's Illustr.* 1, *p.* 69 ; *Roxb. Fl. Ind.* III. *p.* 164 ; *Gra. Cat. B. pl. p.* 16 ; *Bal, Cyclo. of Ind.*

Bombax, (*Linn.*) So named from *bombax*, cotton, in reference to the wool in its pods.

61. B. malabaricum, (*D. C.*) Red cotton tree. Mool elava marum, *Tam.* Buruga Chettoo, *Tel.* Ruckta simul. *Hind.*

Trunk prickly : leaflets 5-7, quite entire, acuminated at both ends : fruit oblong, obtuse.

Remarks.—This tree grows to a very large size. Yields a gum resin, named "mocherus," and its roots are the "soofaid mooslee" of the bazars. The wood is admirably fitted for making tea chests, being soft and light and easily worked, and is thus much used in the Government Tea Factories of the Himalayas. Flowers in February and March, large, of a beautiful bright red colour, rendering the tree a most conspicuous object. Common all over India.—*W. and A. Prod. p.* 61 ; *Gra. Cat. p.* 16 ; *Bal. Cyclo. of Ind. ; Wight's Illustr. Fig.* 29 ; Bombax heptaphylla ; *Roxb. Fl. Ind.* III. *p.* 167.

ERIODENDRON, (*D. C.*) From *erion*, wool, and *dendron*, a tree ; the capsule is filled with a fine, silky, woolly snbstance.

62. E. ANFRACTUOSUM, (*D. C.*) White Cotton tree. Elavum marum, *Tam.* Suffaid simul, *Hind.*

Trunk at the base prickly : leaflets 5-8, quite entire or serrulated towards the point, lanceolate, mucronate, glaucous beneath ; anthers versatile, anfractuose.

Remarks.—An elegant, erect growing tree, throwing out regular horizontal branches, flowers drooping, of dingy white ; appearing in February and March when the tree is destitute of leaves : capsules size of a goose egg, filled with soft silky wool, which is used for stuffing pillows. Common on the Coromandel coast.—*W. and A. Prod. p.* 61 ; *Gra. Cat. of B. pl. p.* 17 : *Wight's Icon. Fig.* 400 ; *Bal. Cyclo. of Ind ; Bombax pentandrum ; Roxb. Fl. Ind.* III. *p.* 216.

TRIBE II. HELICTEREÆ. Leaves simple. Flowers perfect.—*Lind. V. K. p.* 369.

63. ISORA CORYLIFOLIA, (*End.*) East Indian Screw tree.

Remarks.—A tall shrub or small tree, much resembling the common hazel ; flowers bright red, showy ; appears in the rains. Carpels 5, screw-like ; twisted together. Rope may be made from the fibre of the bark of this shrub. Extends from one end of India to the other, particucularly along the foot of the Himalayas.—*Hort. Cal. p.* 102 ; *Wight's. Icon. Fig.* 150 ; Helicteres Isora ; *W. and A. Prod. p.* 60 ; *Gra. Cat. B. pl. p.* 16 ; *Roxb. Fl. Ind.* III. *p.* 143.

TRIBE III. STERCULEÆ. Leaves simple or palmate. Flowers unisexual by abortion.—*Lind. V. K. p.* 362.

HERITIERA, (*Aiton.*) So named in honor of the French botanist, L'Heritier de Bautelle.

64. H. MACROPHYLLA, (*Wall.*) Looking glass plant. Flowers small, yellowish.—*Hort. Cal. p.* 103.

71. D. ANGULATA, (*Cav.*) Angular leaved Dombeya. A shrub; leaves cordate, acuminate, serrate, old ones 3 or 5 angled; flowers in terminal corymbs; of a pretty rose colour, something like those of the common Oleander. Native of Bourbon.—*Gra. Cat. B. pl. p.* 19; *Hort. Cal. p.* 107; Dombeya tiliæfolia; *Roxb. Fl. Ind.* III. *p.* 157.

72. D. PALMATA, (*Cav.*) Palmate leaved Dombeya. A shrub; leaves palmate, 5-7 cleft; flowers in large terminal corymbs. Native of Bourbon.—*Gra. Cat. B. pl. p.* 19; *W. and A. Prod. p.* 68; *Hort. Cal. p.* 107.

ASTRAPÆA, (*Lindl.*) Named from *astrape*, lightning, alluding to the bright colour of the flowers.

73. A. WALLICHII (*Lindl.*) A shrub, leaves cordate, angularly lobed, very soft to the touch; flowers in large compact umbels: scarlet, with yellow anthers: have rather a disagreeable smell. Native of Madagascar.—*Gra. Cat. of B. pl. p.* 20; *Hort. Cal. p.* 108.

PTEROSPERMUM, (*Schreber.*) From *pteron*, a wing, and *sperma*, a seed; the seeds are winged.

74. P. SUBERIFOLIUM, (*Lam.*) *Gra. Cat. B. pl. p.* 19; *W. and A. Prod. p.* 68; *Hort. Cal. p.* 107.

KYDIA, (*Roxb.*) In honor of Colonel Robert Kyd, the first director of the Calcutta Botanic garden.

75. K. CALYCINA, (*Roxb.*) *W. and A. Prod. p.* 70; *Roxb. Fl. Ind:* III. *p.* 188; *Wight's Icon. Fig.* 880; *Gra. Cat. B. pl. p.* 20.; *Bal. Cyclop. of Ind.*; *Hort. Cal. p.* 108.

TRIBE III. ERIOLÆNEÆ.

76. VISENIA VELUTINA, (*Voigt.*) A considerable tree, of great beauty, with rose coloured flowers and velvety leaves; introduced from Sumatra, the seeds having been sent to the Horticultural Society's Gardens by Dr. Wallich.—*Hort. Cal. p.* 109; *M. E. & R.*; Visenia umbellata; *Wight's Icon. Fig.* 509.

77. MICROCHLÆNA QUINQUELOCULARIS, (*W. & A.*) *Prod. p.* 71 ; *Wight's Icon. Fig.* 882.

ORDER XVII. TILIACEÆ. JUSS.

LINDEN TRIBE.

Description.—Trees or shrubs, very seldom herbaceous plants, with alternate leaves having deciduous stipules, floral envelopes tetramerous or pentamerous, calyx valvate, stamens indefinite, outer ones sometimes petaloid and abortive, anthers two-celled, a glandular disk, style one, fruit dry or pulpy with several cells, often by abortion one-celled, seeds anatropal and albuminous.

Distribution.—The principal part of the order is found within the tropics all over the world, forming weed-like plants, or shrubs, or trees, with handsome, usually white or pink, flowers.

Properties.—The plants of the order possess mucilaginous qualities. Many of them yield timber, fibre, and edible fruits. *Corchorus capsularis* yields the textile material called Jute, or Jute Hemp.— *Bal. Out of Bot. p.* 409 ; *Lind. V. K. p.* 371..

CORCHORUS, (*Linn.*) From *kore*, a pupil, and *koreo*, to purge; in allusion to the laxative qualities of *C. olitorius*.

78. C. ACUTANGULUS, (*Lam.*)

A common weed with small yellow flowers.— *W. & A. Prod. p.* 73 ; *Gra. Cat. B. pl. p.* 20; *Hort. Cal. p.* 127 ; *Wight's Icon. Fig.* 739.

TRIUMFETTA, (*Linn.*) In honour of John Baptist Triumfetti, an Italian botanist and author.

79. T. ANGULATA, (*Lam*).

An annual, with small yellow flowers. East Indies.— *W. and A. Prod. p.* 74 ; *Wight's Icon. Fig.* 320 ; *Gra. Cat. B. pl. p.* 21 ; *Hort. Cal. p.* 127.

GREWIA, (*Juss.*) In honor of Nehemiah Grew, a once famous English vegetable physiologist.

80. G. ASIATICA, (*Linn.*) Asiatic Grewia. Phulsa, *Beng.* The fruit, Fulsa pullum, *Tam.* A small tree, berries acid, palatable, used for making sherbet.

Grows in the Peninsula of India, and Bengal, much cultivated in Guzerat.—*Hort. Cal. p.* 128 ; *Gra. Cat. B. pl. p.* 21 ; *W. and A. Prod. p.* 79 ; *Roxb. Fl. Ind.* II. *p.* 586 ; *Bal. Cyclop. of Ind.*

BERRYA, (*Roxb.*) In memory of Dr. Berry who first introduced it into Calcutta.

81. B. AMMONILLA, (*Roxb.*) Trincomalee wood-tree: Trincomallay marum, *Tam.*

Remarks.—An ornamental tree, introduced from Ceylon to the continent of India; the wood is annually imported from Trincomallee, which gives it its appellation in the Madras market. It is highly esteemed for its lightness and strength, is straight grained—slightly pliant, and tough: is little affected by the atmosphere, and is employed in the construction of the Massoola boats of Madras, (*Wight*). Flowers small, white, with gold coloured anthers.—*W. & A. Prod. p.* 81; *Roxb. Fl. Ind.* II. *p.* 639; *Wight's Illustr. Fig.* 34; *Hort. Cal. p.* 12; *Bal. Cyclop. of India.*

ORDER XVIII. AURANTIACEÆ. CORR.

ORANGE TRIBE.

Description.—Trees or shrubs with alternate, compound exstipulate, dotted leaves, and fragrant flowers. Calyx short, urceolate or campanulate, 3-5 toothed. Petals, 3-5. Stamens equal in number to the petals, or a multiple of them, inserted along with the petals on a hypogynous disk; filaments sometimes united in one or more bundles. Ovary free; style cylindrical; stigma thickish. Fruit a hesperidium, sometimes, as in fingered citrons and horned oranges, becoming monstrous by the separation of the carpels, or by the multiplication of carpels, so that one fruit is included within another. Seed exalbuminous, often polyembryonous.

Distribution.—The plants of this order are found almost exclusively in the East Indies, whence they have in some cases spread over other tropical countries.

Properties.—All the Aurantiaceæ abound in a fragrant oily matter; which is contained in the receptacles of secretion in the rind of the fruit, and in the leaves of the tree. The pulp of the fruit is more or less acid, and is used either in its natural state, or medicinally, in various forms. The peculiar properties of the species of this tribe will be found mentioned under each.—*Bal. Outlines of Botany, p.* 411; *Lind. V. K.* 457.

ATALANTIA, (*Corr.*) The fruit of this shrub is of a golden yellow colour, whence the name, from Atalanta, the daughter of Schœnus; so swift that she promised to marry him who outran her, and by casting three golden apples in her way, she was overtaken by Hippomenes.

82. A. MONOPHYLLA, (*D. C.*) Simple-leaved Atalantia. Caateyaloomiche marum, *Tam.* Thorns small: leaves ovate or oblong, more or less emarginate at the apex: racemes short, sessile; pedicels long, slender: flower-buds oblong-pear-shaped.

Remarks.—This is a large ever-green shrub, which furnishes a clear white timber very fine close-grained, hard and durable, though never found large enough to become an article of general utility. Flowers small and

white. Native of the East Indies.—*W. and A. Prod. p.* 91 ; *Gra. Cat. B. pl. p.* 23 ; *Bal. Cyclo. of Ind.*; *Hort. Cal. p.* 138 ; Limonia monophylla ; *Roxb. Fl. Ind.* II. *p.* 878.

TRIPHASIA, (*Lour.*) From *triphasios*, triple ; the calyx is three-toothed, and there are three petals.

83. T. TRIFOLIATA, (*D. C.*) China Orange. Cheena narungee, *Beng.* Leaves, 3-foliate ; leaflets ovate, retuse, crenated from about the middle and upwards, lateral ones the smaller.

Remarks.—This is a very handsome shrub, flowers small, white, fragant ; fruit bright red, said to make good preserves. Native of China, cultivated in India.—*W. and A. Prod. p.* 91 ; *Hort. Cal. p.* 138 ; *Gra. Cat. B. pl. p.* 23.

BERGERA, (*Kœnig.*) In compliment to C. J. Berger, a botanist at Kiel.

84. B. KŒNIGII, (*Linn.*) Curry leaf. Karivepilli or Kuroo-apilai marum, *Tam.* Karivepa or Carcypawkoo chettoo, *Tel.* Bur-sunga, *Beng.* A small tree with pinnate leaves, leaflets alternate, ovate, acuminated, serrated, pubescent : panicles corymbiform, terminal.

Remarks.—Flowers small, white, fragrant ; leaves very fragrant, much used for seasoning curries, and supposed to be stomachic and tonic. An infusion of the dried leaves is said to check vomiting. Coromandel, Assam, and Kemaon.—*W. and A. Prod. p* 94 ; *Wight's Illustr.* I *p.* 105 ; *Hort. Cal. p.* 130 ; *Gra. Cat. B. pl. p.* 24 ; *Wight's Icon. Fig.* 13 ; *Roxb. Fl. Ind.* II. *p.* 375.

MURRAYA, (*Kœnig.*) In honour of John Adam Murray, once Professor of Botany at Gottingen.

85. M. EXOTICA, (*Linn.*) China Box. Kaminee, *Beng.*

Remarks.—This is an elegant shrub, with dark green leaves ; flowers strongly fragrant, much cultivated in gardens. Found in various parts of India.—*W. and A. Prod. p.* 94 ; *Wight's Icon. Fig.* 96. ; *Gra. Cat. B. pl. p.* 24 ; *Roxb. Fl. Ind.* II. 374 ; *Hort. Cal. p.* 139.

COOKIA, (*Sonnerat.*) In memory of the celebrated circum-navigator Captain James Cook, R. N.

86. C. PUNCTATA, (*Retz.*) Whongpi or Wampee tree. Leaflets in three or four pairs, obliquely ovate-oblong,

acuminated, quite entire, glabrous on both sides, scabrous on the nerves beneath : petals 5 : stamens 10.

Remarks.—A small tree : flowers small, faintly fragrant, fruit yellow, pulp white, rather acrid but sweet, much esteemed as an article of diet in China and the Indian Archipelago. Native of China.—*W. and A. Prod. p.* 95 ; *Bal. Cyclop. of Ind.*; *Hort. Cal p.* 140 ; *Roxb. Fl. Ind.* II. *p.* 382 ; *Gra. Cat. B. pl. p.* 24.

FERONIA, (*Corr.*) So named from *Feronia*, the goddess of the forest, in allusion to its habitat.

87. F. ELEPHANTUM, (*Corr.*) Elephant or Wood-apple tree, Vela marum, Velanga, *Tam.* Veluga chettoo, *Tel.* Koit, *Hind.* Kuthbel, *Beng.*

Remarks.—A large handsome tree, with pinnate leaves ; flowers small, greenish white, anise scented, fruit large with grey coloured, very hard rind. Wood hard and durable. From wounds in the bark a very transparent gum exudes, having the properties of gum arabic, and said to be better suited for mixing colours than the Arabian gum. The young leaves also, like the flowers, emit a fragrance of anise, and are therefore considered stomachic and carminative. The pulp of the fruit can be made into a very pleasant jelly, so closely resembling that of black currants, as to be only distinguishable by a slight degree of astringency observed in that of the Wood Apple. (*Wight.*) Native of the Moluccas, Coromandel, Bengal, &c.—*W. & A. Prod. p.* 69. *Wight's Illustr. p.* 105 ; *Hort. Cal. p.* 141 ; *Gra. Cat. B. pl. p.* 24 ; *Roxb. Fl. Ind.* II. *p.* 411 ; *Wight's Icon. Fig.* 15 ; *Bal. Cyclop. of Ind.*

ÆGLE, (*Correa.*) The word is from *ægle*, one of the Hesperides.

88. Æ. MARMELOS, (*Corr.*) The Bæl tree or Bengal Quince. Vilva marum, *Tam.* Maradoo, *Tel.*

Tree, middling size, armed with sharp spines : leaves pinnate : leaflets oblong, or broad-lanceolate, crenulated, unequal, middle one petiolate, lateral ones almost sessile : petals, 4-5, spreading : stamens distinct : style short, thick : flowers in panicles, axillary on long pedicels, large, greenish-white, fragrant : fruit with a hard rind, smooth, many-seeded : seeds covered with a transparent glutinous liquid.

Remarks.—The fruit is much larger than that of *Feronia elephantum*, is very delicious to the taste, exquisitely fragrant, and nutritious, but laxative ; the mucus of the seed is a good cement for some purposes. A decoction of the root and bark is supposed on the Malabar Coast to be a sovereign

remedy in hypochondriasis, melancholia, and palpitation of the heart; the leaves in decoctions are used in asthmatic complaints, and the fruit a little unripe is given in diarrhœa and dysentery; when ripe and mixed with juice of tamarinds, it forms an agreeable drink. Found growing all over India; commonly about the Pagodas, as the natives have a deep reverence for this tree.—*W. & A. Prod. p* 96.; *Roxb. Fl. Ind.* II· *p* 579; *Lind. V. K. p.* 458; *Gra. Cat. B. pl.* 24; *Bal. Cyclop. of Ind.*; *Hort. Cal. p.* 141; *Wight's Icon. Fig.* 16.

CITRUS, *(Linn.)* This genus is said to derive its name from Citron, in Judea.

89. C. DECUMANA, *(Linn.)* Pumplemose or Shaddock. Boomlimas pullum, *Tam.* Chuckotura, *Hind.*

This is a well known fruit-tree, flowers large, white, fragrant. The fruit is the largest of the Orange tribe. It is cooling and aperient, and in taste somewhat resembles the orange, cultivated in India. Native of the Moluccas, Sunda Islands, China, and Japan.—*W. & A. Prod· p.* 97; *Roxb. Fl· Ind.* III. *p.* 393; *Gra. Cat. p.* 25; *Hort. Cal. p.* 141; *Bal. Cyclop. of Ind.*

90. C. AURANTIUM, *(Linn.)* Sweet orange. Kolinjie pallum, also Kitchilie pallum. *Tam.* Kichilie pundoo. *Tel.* Kumlaneboo, *Beng.* Naringhie, *Hind.* Flowers large white, fragrant.—*Hort. Cal. p.* 142.

91. C. LIMONUM, *(Risso.)* Lemon. Korna-neboo, *Beng.* Flowers white, tinged with red, fragrant.—*Hort. Cal. p.* 142.

ORDER XIX. GUTTIFERÆ OR CLUSIACEÆ. JUSS. LINDL.

GAMBOGE TRIBE.

Description.—Trees or shrubs with a resinous juice, opposite coriaceous, entire leaves, and occasionally unisexual flowers. Sepals and petals 2, 4, 5, 6, or 8, the former often unequal, the latter equilateral. Stamens numerous, often united. Disk fleshy. Ovary one or many-celled; stigma usually sessile and radiate. Fruit dry or succulent, one or many-celled. Seeds exalbuminous, often immersed in pulp.

Distribution.—All natives of the tropics, the greater part of South America; a few are from Madagascar and the continent of Africa. They generally require situations combining excessive heat and humidity.

Properties.—The properties of the order are in general acrid and purgative. The plants yield a yellow gum resin, in one of its forms it becomes the gamboge of commerce, a substance well known because of its use as a pigment and as a drastic purgative. Gamboge is obtained from different species of Garcinia and Gambogia; that obtained from *G. pictoria* is supposed to be the best. *Garcinia Mangostana* a native of Malacca produces the Mangosteen, one of the finest known fruits.—*Bal. Outlines of Bot. p.* 412; *Lindl.* V. *K. p.* 400.

CALOPHYLLUM *(Linn.)* Expressive of the beautiful leaf; and taken from *kalos*, beautiful, and *phyllon*, a leaf.

92. C. INOPHYLLUM, (*Linn.*) Alexandrian Laurel. Pinnay marum, *Tam.* Ponna Chettoo, *Tel.* Sultana champa, *Hind. Beng.*

Remarks.—A beautiful tree, with delightfully fragrant flowers, they are held in great veneration by the Hindoos who offer them at the shrines of both Siva and Vishnu. The timber of this tree, though coarse-grained, is considered very valuable for some purposes in ship-building, and the seeds afford a good lamp oil. Flowers largish, white.—*Wight's Illustr. p.* 128 ; *Wight's Icon. Fig.* 77 ; *W. & A. Prod p.* 102 ; *Bal. Cyclop. of Ind* ; *Hort. Cal. p.* 87 ; *Roxb. Fl. Ind.* II. *p.* 606.

93. CALYSACCION LONGIFOLIUM, (*R. W.*) Long-leaved Calysaccion.—*Wight's Icon. Fig.* 1999 ; *Gra. Cat. B. pl. p.* 27.

ORDER XX. MALPIGHIACEÆ. JUSS.

BARBADOES CHERRY TRIBE.

Description.—Trees or shrubs, often climbing, with opposite or alternate leaves, and short deciduous, sometimes intrapetiolar, stipules ; occasionally showing peltate hairs. Sepals five, combined at the base, glandular. Petals five, unguiculate. Stamens ten, often monadelphous. Ovary generally of three carpels. Fruit a drupe, a woody nut, or a samara. Seeds orthotropal, suspended by a cord, exalbuminous, embryo straight or curved.

Distribution.—Malpighiads are nearly all tropical plants.

Properties.—The plants of this order are generally astringent ; many are handsome trees or climbers with showy flowers.—*Bal. Outlines of Botany,* 413 ; *Lind. V. K. p.* 388.

MALPIGHIA, (*Plum.*) In honour of Marcello Malpighi, once Professor of Medicine at Pisa.

94. M. PUNICIFOLIA, (*D. C.*) Barbadoes cherry.

Remarks.—This is a highly ornamental shrub ; introduced from the West Indies. Flowers small, pinkish white ; fruit of a bright red colour, agreeably acid, sometimes made into tarts.—*Hort. Cal. p* 170.

95. M. HETERANTHERA, (*Wight.*) A small shrub, flowers white. Supposed to have been brought to Madras from China.—*Wight's Illustr. p.* 138, *Fig.* 40.

96. HIPTAGE MADABLOTA, (*Gærtn.*) Delight of the woods.

Remarks.—A large climbing shrub with very beautiful white and yellow flowers (one of the petals is yellow, the rest white) in terminal racemes ; petals fringed ; one of the stamens is much longer than the rest ; fruit unequally 3 winged. Flowers fragrant. Found in various parts of India.—*W. and A. Prod. p.* 107 ; *Gra. Cat. B. pl. p.* 28 ; *Wight's Illustr. Fig.* 50.

STIGMAPHYLLUM, *Juss.* From *stigma*, a stigma, and *phyllon*, a leaf; stigma foliaceous.

97. S. ARISTATUM, (*Linn.*) Awn-leaved Stigmaphyllum.

This is a handsome climber, flowers yellow. Native of Brazil.

BANISTERIA, (*Linn.*) In memory of the Rev. John Banister, a diligent botanist.

98. B. LAURIFOLIA, (*Linn.*) Laurel leaved Banisteria. An elegant evergreen climber, with oblong ovate leaves: flowers bright yellow, in terminal panicles. A very interesting plant, well worthy of a place in every garden. Native of Jamaica.—*Hort. Cal. p.* 171.

ORDER XXI. ERYTHROXYLACEÆ. LINDL.

ERYTHROXYLON TRIBE.

Description.—Allied to Malpighiads, and distinguished by the flowers growing from among imbricated scales, the absence of calycine glands, the presence of plaited scales at the base of the petals, and by the ovules being anatropal and cordless.

Distribution.—The plants of this order are chiefly West Indian and South American. A few are found in the East Indies.

Properties.—Some of them have stimulating qualities, others yield a tonic bark. *Erythroxylon Coca*, a Peruvian plant called Ipadu by the Indians of the Rio Negro, is famed for exciting the nervous system.—*Balfour's Outlines of Botany, p.* 414 ; *Lind. V. K. p.* 391.

99. SETHIA INDICA, (*D. C.*) Indian Sethia. Semboolinga marum, Thavadarum, *Tam.*

Leaves alternate, obovate or oblong, obtuse, cuneate at the base, feather-nerved, reticulated with veins, under side pale: pedicels axillary, 1-3, about twice as long as the petiole, 1-flowered: calyx 5-lobed: styles combined nearly to the apex, longer than the stamens; stigmas clavate: drupes oblong, triangular, 3-celled; 2 of the cells small, abortive, and without seeds.

Remarks.—When fully grown, it is a small tree; the fruit yields an oil and the wood is esteemed as a substitute for sandal wood. Flowers small, greenish white. Found in various parts of India.—*W. and A. Prod. p.* 106; *Wight's Illustr. Fig* 48 ; *Bal. Cyclop. of Ind*; Erythroxylon monogynum; *Roxb. Fl. Ind.* II. *p.* 449; *Hort. Cal. p.* 172.

ORDER XXII. SAPINDACEÆ. JUSS.

SOAP TREE TRIBE.

Description.—Trees, shrubs, or climbers with tendrils, rarely herbs; having alternate or opposite, usually compound leaves, and unsymmetrical, generally irregular and polygamous flowers. Calyx with 4-5 sepals. Petals 4-5 occasionally wanting, sometimes with an appendage inside. Disk fleshy. Stamens usually 8-10. Ovary 2-3 celled; style undivided, or 2-3 cleft. Fruit capsular or fleshy, sometimes winged. Seeds exalbuminous, arillate; embryo usually curved.

Distribution.—Found chiefly in the tropical parts of South America and India.

Properties.—The properties are various, many of the plaints having saponaceous qualities, has given the name to the order. Some are astringent; others yield edible fruits and seeds and not a few are poisonous. The peculiar properties will be mentioned under the different species.—*Bal. Outlines of Botany p.* 414; *Lindl. V. K. p.* 382.

CARDIOSPERMUM, (*Linn.*) From *kardia*, a heart, and *sperma*, seed; in allusion to the shape of the seeds.

100. C. HALICACABUM, (*Linn.*) Heart-pea, Mooda-cottan, *Tam.* Boodda-kanka-rakoo, *Tel.* [The seeds which are roundish, have a white, heart-shaped spot on a dark ground.]

Remarks.—An annual climbing plant with an inflated membranaceous capsule, from which it is sometimes called the balloon vine. Flowers small, white. The root is diuretic, and aperient. Common, found all over India.—*W. & A. Prod. p.* 109; *Roxb. Fl. Ind.* II *p.* 292; *Wight's Icon. Fig.* 508; *Gra. Cat. p.* 28; *Hort. Cal. p.* 93.

SAPINDUS, (*Linn.*) Altered from *Sapo-indicus*, Indian soap: the aril which surrounds the seed is used as a substitute for soap in S. America.

101. S. EMARGINATUS, (*Vahl.*) Soap-nut tree. Poocha cottei marum, Poongaunkottei, also Poovanthee kottei, *Tam.* Koonkoodoo chettoo, *Tel*, Buro-ritha, *Beng*, Rete ka jhar, *Hind.*

Remarks.—A handsome, middle-sized tree, with a short trunk and very large, dense spreading head, decorated with beautiful thick, deep green foliage the whole year; flowers small, white; the seeds are used medicinally and also for washing the finer kinds of silk (*Dr. Gibson.*) Peninsula of India and Bengal.—*Roxb. Fl. Ind.* II. *p.* 279; *W. and A. Prod. p.* 111; *Wight's Illustr. Fig.* 51; *Gra. Cat. p.* 29; *Hort. Cal. p.* 94; *Bal. Cyclop. of Ind.*

102. S. FRUTICOSUS, *(Roxb.)*

A shrub, with rose coloured flowers, rather pretty. Introduced from the Moluccas.—*Roxb. Fl. Ind.* II. 283; *Gra. Cat. B. pl. p.* 29; *Hort. Cal. p.* 94.

NEPHELIUM, *(Linn.)* One of the names given to the burdock by the ancients; and the fruit of this plant has some resemblance to the capitula or heads of a burdock.

103. N. LICHI, (*W. and A.*) The Litchi, or Lee Chee tree.

Remarks.—This handsome tree, bears the famous Lee chee, of the Chinese, a delicious fruit, as large as a good sized plum. It is dried like raisins; and forms an extensive article of commerce. The tree is much cultivated in Bengal, and other parts of India; native of China. Flowers small, greenish white.—*Wight's Icon. Fig.* 48; *Gra. Cat. B. pl. p.* 29; *Hort. Cal. p.* 95; Scytalia Lichi. *Roxb. Fl. Ind.* II. *p.* 269; Euphoria Litchi, *Desf.* Dimocarpus Lichi, *Lour.*

BLIGHIA, *(Konig.)* Dedicated to Captain Bligh, who first carried the bread-fruit to the West Indies.

104. B. SAPIDA, (*Kon.*) The Akee tree. This tree is much esteemed in Africa and the W. Indies, on account of its fruit, which is as large as a goose's egg, and of a reddish, or yellow colour; the aril is eatable, of a sub-acid flavour, and considered very grateful, particularly in the West Indies. Flowers small, greenish white. Native of Guinea, cultivated in India.—*Gra. Cat. B. pl.* 30. Cupania sapida, (*Cambess.*) *Hort. Cal. p.* 94.

ORDER XXIII. MELIACEÆ. JUSS.

(8)

BEAD TREE TRIBE.

Description.—Trees or shrubs with alternate, exstipulate simple or compound leaves. Sepals 3, 4, or 5, more or less united. Petals, the same number. Stamens twice as many as the petals. Disk cup-like. Ovary, with cells varying from 3 to 12. Fruit succulent or capsular. Seeds not winged, with or without albumen; embryo with leafy cotyledons.

Distribution.—These are chiefly tropical plants, found in Asia, America, and Africa, and there are 150 known species.

Properties.—The properties of the order are bitter, astringent, and tonic. Some of the plants act as powerful purgatives and emetics.—*Bal. Out. of. Bot. p.* 415; *Lind. V. K. p.* 463.

MELIA, *(Linn.)* So named from a Greek word, from its leaves resembling those of the manna ash.

105. M. AZEDARACH, (*Linn.*) Persian Lilac, or Common Bead tree. Leaves bi-pinnate; leaflets obliquely ovate-lanceolate, serrated, taper-pointed, of a deep shining green.

Remarks.—This is a large useful timber tree of very great beauty, it flowers are like those of the *Lilac*, and are sweetly fragrant. Root bitter, nauseous, used in N. America, as an anthelmintic. Native of Syria, China, N. India, common about villages both in the Concan and Deccan —*Roxb. Fl. Ind.* II. *p.* 395; *W. and A. Prod. p.* 117; *Wight's Icon. Fig.* 160; *Hort. Cal. p.* 133; *Bal. Cyclop. of Ind.*; *Gra. Cat. p.* 30.

AZADIRACHTA, (*Ad. Juss.*) Said to be derived from the Persian name *Azad Durukht*, 'the excellent tree.'

106. A. INDICA, (*Ad. Juss.*) Neem or Margosa tree. Vaypum marum, *Tam.* Nim, *Beng.*

Remarks.—This beautiful tree is common every where in India, and is as useful as it is ornamental. Its chief virtues reside in the bark, which has a remarkably bitter taste, and has been employed as a fair substitute for Cinchona. The natives consider it a most useful tonic in intermittent fevers and chronic rheumatism, administering it either in decoction or powder. The dried leaves are used as poultices, as a powerful discutient of glandular tumours. In various diseases of the ears, eyes and teeth, they are successfully administered in many ways. The timber is hard and durable, and fit for ship-building, and other purposes. From the pericarp of the seed an acrid bitter oil is expressed. It is obtained either by boiling or expression, is of a deep yellow colour, and is much used for burning in lamps. The seeds after being skinned are employed to kill insects, and the kernels powdered and mixed with water for washing the hair.—*Useful plants, &c., Bal. Cyclop. of Ind.*; *Hort. Cal. p.* 134; *W. and A. Prod. p.* 118; *Wight's Icon. Fig* 17; *Gra. Cat. B. pl. p.* 30; Melia azadirachta; *Roxb. Fl. Ind.* II. *p.* 394.

ORDER XXIV. CEDRELACEÆ. R. BROWN.

TOON TREE TRIBE.

Description.—Trees with alternate, pinnate, exstipulate leaves, allied to Meliaceæ, and chiefly distingushed by their indefinite and winged seeds. The fruit is capsular, the valves separating from a thick axis.

Distribution.—They are common in the tropical parts of America and India. There are 25 known species.

Properties.—Fragrant, aromatic, and tonic qualities belong to the species of this order. Many yield excellent timber.—*Bal. Outlines of Botany, p.* 416; *Lind. V. K. p.* 461.

SWIETENIA, (*Linn.*) So named in honour of Gerard Van Swieten, a Dutch botanist, and author.

107. S. MAHAGONI, (*Linn.*) Mahogany tree.

Remarks.—This is one of the most handsome and valuable of the trees in our garden: they were introduced into Madras, from the Calcutta Botanic gardens, and are now trees of considerable size and beauty. The timber so well known for its general use in furniture and cabinet making, is of a rich red-brown, of different shades and markings, capable of taking a brilliant polish, close-grained, very little liable to warp or shrink, and having a semi-resinous juice which preserves the wood from the attacks of insects. The plant is a native of the West Indies, and Central America, but is said to be cultivated in northern and southern India.—*Hort. Cal. p.* 137 ; *Bal. Cyclop. of Ind.*

CHICKRASSIA, (*Ad. Juss.*) The Bengalee name, latinized.

108. C. TABULARIS, (*Juss.*) Chittagong-wood tree. Aglay marum, *Tam.* Chetakum chettoo, *Tel.* Chikrasse, *Beng.*

Remarks.—In Madras, the wood is extensively used in cabinet making under the denomination of "Chittagong-wood," being imported from that province, but it is abundant in the mountainous parts of the Peninsula of India. It makes beautiful and light furniture, but is apt to warp during the season of the hot land winds. Flowers greenish white.—*W. and A. Prod. p.* 123 ; *Wight's Illustr. Fig.* 79 ; *Bal. Cyclop. of Ind.* ; *Hort. Cal. p.* 137 ; Swietenia Chickrassa ; *Roxb. Fl. Ind.* II. *p.* 399.

CHLOROXYLON, (*W. C.*) From *chloros*, green, and *xylon*, wood; on account of the green or deep yellow colour of the wood.

109. C. SWIETENIA, (*W. C.*) Satinwood tree. Kodawah porsh, *Tam.* Billu kurra chettoo, *Tel.* Dhoura, *Hind.*

Leaflets alternate from ten to twenty paired, semi-cordate, oblong. Nectary, a fleshy ring, with the stamina inserted round its base. Panicles terminal. Capsules three-celled.

Remarks.—This tree grows abundantly in the mountainous districts of the Madras Presidency, in the jungles of Goozerat and the Deccan, but seldom attains a large size. The wood is very close-grained, hard and durable, of a light orange colour, takes a fine polish, is well adapted for ornamental purposes, but is somewhat apt to split. The timber bears submersion well; in some instances it is beautifully feathered. It has the peculiarity of losing its beauty by age, unless protected by a coat of fine varnish.—*W. and A. Prod. p.* 123; *Gra. Cat. B. pl. p* 32 ; *Bal. Cyclop. of Ind.* ; *Hort. Cal p.* 137. ; Swietenia Chloroxylon, *Roxb. Fl. Ind.* II. *p.* 400.

ORDER XXV. VITACEÆ OR AMPELIDEÆ. LINDL.

VINE TRIBE.

Description.—Shrubby plants climbing by tendrils, with tumid joints, simple or compound leaves, opposite below, alternate above, and small

Distribution.—The plants of the order are met with both in hot and temperate regions. There are 328 known species.

Properties.—The Oxalids or Wood-sorrels have generally acid properties, from the presence of oxalic acid in the form of binoxalate of Potass, which is called the salt of sorrel. Some of them have sensitive leaves. Oxalis Deppei has fleshy roots, which are used as culinary vegetables.—*Bal. Outlines of Botany, p.* 418; *Lindl. V. K. p.* 488.

AVERRHOA, (*Linn.*) In honour of Averrhoes of Cordova, in Spain, a celebrated physician.

120. A. CARAMBOLA, (*Linn.*) Carambola tree. *Tamartim marum, Tam.*

Remarks.—A tree, with close, thick-set, drooping branches; flowers lateral, on short racemes; variegated with white and purple,—fruit acutely angled; the leaves of this tree are very sensitive. Root, leaves, and fruit are medicinal. Native of the Moluccas, cultivated all over India.—*Gra. Cat. B. pl. p.* 34; *W. and A. Prod. p.* 141; *Roxb. Fl Ind.* II. *p.* 450; *Bal. Cyclop. of Ind; Hort. Cal. p.* 191.

121. A. BILIMBI, (*Linn.*) Bilimbi tree, Bilimbie Kai, *Tam.*

Remarks.—The fruit of this tree as well as the former, are very acid; they are commonly made into pickles or preserves, or candied. The juice has a pleasant acid taste, and is an excellent agent for removing iron mould. Flowers small, reddish brown. Native of the Moluccas, cultivated in India.—*Roxb. Fl. Ind.* II. *p.* 451; *Gra. Cat. B. pl. p.* 35; *W. and A. Prod. p.* 142; *Bal. Cyclop. of Ind.*; *Hort. Cal. p.* 191.

OXALIS, (*Linn.*) From *oxys*, acid; the leaves have an acid taste.

122. O. CORNICULATA, (*Linn.*) Prostrate Oxalis. Pooliary keery, *Tam.* Pullachinta. *Tel.* Amrool, *Beng.*

Remarks.—A common weed on lawns and in gardens, used by the natives in making chatney; and in curries, a good substitute for lime juice or tamarinds imparting a peculiar acid taste. This plant is also used medicinally. Flowers small, yellow.—*Jaffrey's Hints*; *Roxb. Fl. Ind.* II. *p.* 457; *W. and A. Prod. p.* 42; *Wight's Icon. Fig.* 18; *Hort. Cal. p.* 191; *Bal. Cyclop. of Ind.*

123. O. CHINENSIS?—Chinese Oxalis.

ORDER XXVIII. BALSAMINACEÆ, LINDL.

BALSAM TRIBE.

Description.—Annual succulent herbs, with simple, exstipulate leaves and irregular flowers. Sepals five, coloured, irregular, the odd one spurred. Petals five, irregular, distinct or cohering. Stamens five. Ovary of

five united carpels ; stigmas sessile. Fruit, a capsule opening septifragally by five elastic valves, which become coiled up. Seeds exalbuminous; embryo straight.

Distribution.—The plants of this order abound in India. There are 110 known species.

Properties.—Unimportant.—*Bal. Outlines of Botany, p.* 419 ; *Lind. V. K. p.* 490.

BALSAMINA, (*Gœrtn.*) Called *balassan* by the Arabs, from which most probably the name balsamina has sprung.

124. B. HORTENSIS, *Varieties.* Garden Balsams.

Remarks.—This annual, pretty with its various colors, is well worth cultivating in flower beds, requires to be sown thinly in a box or seed pan ; after the *Plants* are 2 or 3 inches high, they should be transplanted out singly in well manured soil ; if to be grown in pots, they should be put in small sized ones at first and repotted into larger, when requisite, which will occur when the small pots are filled with roots. The soil best adapted for pot culture is two parts strong loam approaching in appearance to brick earth. and two parts well decayed manure, with a *little lime,* which will aid in preventing the mildew, so destructive to the Balsam. The pots should be well drained and the plants must never be neglected in watering. This is said to be a native of the East Indies, on the plains of which country the fine varieties soon degenerate into weeds ; seed may be sown every month. —*Jaffreys's Hints, p.* 22.

ORDER XXIX. TROPÆOLACEÆ. LINDL.

THE INDIAN CRESS OR NASTURTIUM TRIBE.

Description.—Trailing or twining herbs with alternate, exstipulate, and peltate or palmate leaves. Calyx spurred, formed by five united sepals. Petals five, the two upper arising from the throat of the calyx, remote from the three lower unguiculate petals. Stamens usually eight, distinct. Ovary of three united, one-seeded, carpels. Fruit indehiscent, monospermal, carpidia separating from a common axis. Seed exalbuminous, filling the cells ; embryo large.

Distribution.—They are chiefly South American plants. There are about 40 known species.

Properties.—Indian cresses possess acrid and pungent qualities.—*Balfour's Outlines of Botany, p.* 419 ; *Lindl. V. K. p.* 366.

TROPÆOLUM, (*Linn*). From *tropaion,* a trophy ; the leaves resemble a buckler, and the flowers an empty helmet.

125. T. MAJUS, (*Linn.*) Indian Cress.

Remarks.—This is a showy ornamental annual, and also a culinary plant. The flowers and leaves are eaten in salads, and are very grateful. The seeds are pickled in salt and vinegar, and used as a substitute for capers, to which some persons indeed prefer them. The Indian cresses, are com-

monly known in Gardens as nasturtion. The flowers are of various colours. Native of Peru.—*Loud. Encyclop. of Pl. p.* 302.

Order. XXX. ZYGOPHYLLACEÆ, Lindl.

Bean Caper Tribe.

Description.—Herbs, shrubs, or trees, with opposite, stipulate, usually pinnate, not dotted leaves. Calyx 4-5 parted, convolute. Petals unguiculate, at first minute, afterwards large, imbricate. Stamens 8-10, often arising from the back of scales. Ovary 4-5 celled, surrounded by glands or a disk; style simple. Fruit usually a capsule, 4-5 angled, opening in a loculicidal manner by 4-5 valves. Seeds usully albuminous, (Tribulus is exalbuminous); embryo green.

Distribution.—Bean capers are generally distributed; some are peculiar to America; others are found in Europe, India, Africa, and New Holland.

Properties.—The plants have diaphoretic and anthelmintic qualities. The wood of the arborescent plants of the order is very hard and durable.—*Balfour's Outlines of Botany, p.* 420; *Lindl. V. K. p.* 478.

Tribulus, *(Linn.)* From *treis* three, and *ballo*, to project; each carpel is armed with three sometimes four prickly points.

126. T. lanuginosus, (*Linn*.) Caltrops.

A common weed. Flowers yellow, sweet-scented. The seed and capsules are highly mucilaginous.—*W. and A. Prod. p.* 145; *Roxb. Fl. Ind.* II. *p.* 401; *Wight's Icon. Fig.* 98; *Hort. Cal. p.* 184; *Bal. Cyclop. of Ind.*

Guaiacum, *(Linn.)* Guaiac is the South American name of the tree.

127. G. officinale, (*Linn.*) Guaiac tree.

Remarks.—This very handsome shrub, supplies the resin called Guaiac, which exudes from it spontaneously and also after incisions. The wood is hard, and when fully matured has a greenish black colour. It receives the name of Lignum vitæ, and is remarkable for the crossing of of its fibres. The resin (Guaiacine of some), and the wood are stimulant and diaphoretic, and have been employed medicinally in cutaneous affections. Dr. Lindley is of opinion that it is not this but some other species of Guaiacum, which furnishes the valuable timber called Lignum vitæ; as the small size of this tree seems quite incompatible with the production of timber four or five inches in diameter. Flower blue, changing to white. Native of the West Indies.—*Balfour's Class Book of Botany, p.* 788; *Lindl. V. K. p.* 479; *Bal. Cyclop. of India.*

Order XXXI. RUTACEÆ. Lindl.

Rue Tribe.

Description.—Herbs, shrubs, and trees, with exstipulate dotted leaves and perfect flowers. Calyx in 4-5 divisions. Petals 4-5. occasional-

ly wanting. Stamens, as many, or twice, or thrice as many, as the petals, placed outside a hypogynous disk. Ovary sessile or stalked, 3-5 lobed; styles united, occasionally separated at the base. Fruit of several carpels, either combined, or more or less distinct, often separating when ripe, and dehiscing by one or both sutures. Seeds, one or two in each carpel; the true Ruteæ (European plants) have albuminous seeds, while the Diosmeæ (from the Cape and New Holland) have exalbuminous seeds.

Distribution.—The plants are found in Europe, Cape of Good Hope, New Holland, and America. There are 400 known species.

Properties.—The order is characterized by its peculiar penetrating odour. The plants are employed medicinally as antispasmodics, tonics, and febrifuges. The leaves of *Correa alba* are used in Australia for tea. It is various species of Barosma which furnish the Bucku plants of the Cape of Good Hope, remarkable for their overpowering and penetrating odour, caused by the presence of a yellowish volatile oil.—*Balfour's Outlines of Botany, p.* 421; *Lindl. V. K. p.* 469.

RUTA, (*Linn.*) From the Greek *rute,* from *rue,* to flow; probably in reference to some reputed qualities of the plants; hence the English word Rue.

128. R. GRAVEOLENS, (*Linn.*) Common Rue. The herb of grace.

Remarks.—The rue was formerly in much repute as a medicinal plant, and also as emblematical of repentance and grace. In Shakspeare and other old authors, it is called herb of grace, as rosemary is called herb of remembrance. The leaves have a powerful unpleasant odour, and a hot, bitter, nauseous taste. Its leaves and unripe fruit are used medicinally. The plant is the Peganon of Scripture, rendered Rue in Luke xi. 42.—*Loud. Encyclop. of Pl. p.* 354; *Gra. Cat.* B. *Pl. p.* 36.

LEMONIA, (*Lindl.*) Named in honour of Sir Charles Lemon, Bart.

129. L. SPECTABILIS, (*Lindl.*) Showy Lemonia. Leaves petiolate, trifoliate, smooth. Leaflets, obovate. Peduncles axillary, 2-3 flowered. Flowers, deep rose. Native of Cuba—*Loud. Encyclop. of Pl. p.* 1324.

ORDER XXXII. OCHNACEÆ, D. C.

OCHNA TRIBE.

Description.—A small group of under shrubs; or trees allied to Rutaceæ, and distinguished by their simple, dotless, stipulate leaves, and their enlarged fleshy gynobase or torus. They are found in the tropical parts of India, Africa and America. The order is characterized by bitter, tonic properties. The plants want the aromatic qualities of the Rueworts.—*Balfour's Outlines of Botany, p.* 422; *Lindl. V. K. p.* 474.

OCHNA, (*Schreber.*) From *Ochne*, the Greek name of the wild pear-tree; to which there is some resemblance in the foliage.

130. O. SQUARROSA, (*Linn.*) Salanthy marum, *Tam.*

Remarks.—A small tree with ovate oblong shining leaves, slightly serrated; flowers numerous, yellow: growing in racemes from the branches below the leaves; carpels several; placed in a circle round the base of the style. It is a very handsome tree at all times, but particularly so when in flower in March and April; found in both Peninsulas of India. Assam.—*Gra. Cat. B. Pl. p.* 37; *W.* &. *A. Prod. p.* 152; *Roxb. Fl. Ind.* II. *p* 643; *Hort. Cal. p.* 181; *Wight's Illustr. Fig* 69.

ORDER XXXIII. SIMARUBACEÆ. RICH.

QUASSIA TRIBE.

Description.—Trees or shrubs, with alternate, exstipulate, dotless, usually compound leaves. Calyx in four or five divisions. Petals 4-5, imbricated. Stamens 8-10, arising from the back of hypogynous scales. Ovary 4-5-lobed, stipitate; style simple. Fruit, consisting of 4-5 drupes arranged around a common receptacle. Seeds, one in each drupe, pendulous, anatropal, exalbuminous.

Distribution.—Natives chiefly of the tropical parts of India, America, and Africa.

Properties.—Bitterness prevails in this Order, the plants being used as tonics, a *Picrasma* (*Picræna*) *excelsa*, Bitter wood, is a large tree, the wood of which is the common Quassia of the shops. *Simaba Cedron* is a tree of New Granada, which has long been celebrated as an antidote to snake bites.—*Balfour's Outlines of Botany*, *p.* 422; *Lindl. V. K. p.* 476.

QUASSIA, (*Linn.*) Quassia, the name of a negro slave, who first used the bark as a febrifuge.

131. Q. AMARA, (*Linn.*) Quassia tree.

Quassia wood is a very pure and simple bitter, and has been much employed in bilious and intermittent fevers, and indeed in all cases in which bitter tonics are advisable. The English brewers are said to use it as a substitute for hops although it is thought to have some degree of narcotic power, a decoction of quassia being much used as a poison for flies. Flowers largish, deep red. Native of Surinam, Guiana, Columbia, and Panama.—*Balfour's Cyclop. of Ind.*; *Hort Cal. p.* 181.

ORDER XXXIV. CELASTRACEÆ. LINDL.

SPINDLE TREE TRIBE.

Description.—Shrubs or trees, with alternate, rarely opposite, simple, stipulate leaves. Sepals and petals 4-5, imbricate. Stamens 4-5 inserted on a large disk which surrounds the ovary. Fruit superior, 2-5 celled, capsular or drupaceous. Seeds usually arillate, albuminous, with a large straight embryo.

Distribution.—Chiefly native of the warm parts of Europe, North America, and Asia; also of the Cape of Good Hope.

Properties.—The order is more or less acrid, and some of the plants yield oil.—*Balfour's Outlines of Botany, p.* 424; *Lindl. V. K. p.* 586.

ELÆODENDRON, (*Jacquin.*) From *elaia*, an olive, and *dendron* a tree; the fruit is like that of an olive and the seeds are oily.

132. E. GLAUCUM, (*Pers.*) Ceylon Tea tree. Flowers small, green. Native of Ceylon.—*Hort. Cal. p.* 167.

ORDER. XXXV. RHAMNACÆ. LINDL.

BUCK-THORN TRIBE.

Description.—Shrubs or trees, often spinose with simple alternate leaves, and small flowers. Calyx 4-5—cleft, valvate. Petals 4-5, cucullate or convolute, inserted on the throat of the calyx, sometimes wanting. Stamens 4-5, opposite the petals. Ovary sometimes adherent to the calycine tube, immersed in a fleshy disk; ovules solitary. Fruit a capsule, berry, or drupe. Seeds erect, albuminous, not arillate.

Distribution.—The plants of this order are found nearly all over the world, except in the Arctic zone.

Properties.—The properties of the order are generally acrid and purgative. Some are bitter, tonic, and astringent; others yield dyes. *Hovenia dulcis* is remarkable for the enlargement of its peduncles, which become succulent, and are used as a fruit in China. *Rhamnus catharticus* yields a cathartic fruit.—*Balfour's Outlines of Botany, p.* 424; *Lindl. V. K. p.* 581.

ZIZYPHUS, (*Tournefort.*) *Zizouf*, in Arabic, is the name of the *Lotus*.

133. Z. JUJUBA, (*Lam.*) The Bhere tree. Yellanday marum, *Tam.* Rega, *Tel.* Ber, *Hind.* Koolgachh, Byur, *Beng.*

Remarks.—This tree is very common about Madras; wood hard and useful, but of small size, is used for making sandals. The fruit is of an acid taste, used in chatnies, and pickles. The fruit from which the famous jujube lozenges are made is the produce of this tree. Flowers small, greenish-yellow. Common almost every where throughout India.—*W. & A. Prod. p.* 162; *Wight's Icon. Fig.* 99; *Bal. Cyclop. of Ind.*; *Gra Cat. B. Pl. p* 39; *Hort. Cal. p.* 145; *Roxb. Fl. Ind.* I. *p.* 608.

SCUTIA, (*Brown.*) So named from *scutum*, a shield; in allusion to the form of the disk.

134. S. INDICA. (*Br.*) Indian Scutia. A tall straggling shrub. Flowers small, greenish-yellow. Native of the Peninsula

of India.—*W. & A. Prod. p.* 165; *Wight's Illustr. Fig.* 73; *Gra. Cat. B. Pl. p.* 39; *Hort. Cal. p.* 146.

COLUBRINA, (*Richard.*) From *koluber*, a snake; alluding to the appearance of the twisted stamens.

135. C. ASIATICA. (*Br.*) Asiatic red wood. A large shrub. Flowers pale greenish. East Indies.—*W. & A. Prod. p.* 166; *Wight's Illustr. Fig.* 74; *Gra. Cat. B. Pl. p.* 39; *Hort. Cal. p.* 147; Ceanothus asiaticus, *L. Roxb. Fl. Ind.* I. *p.* 615.

ORDER XXXVI. ANACARDIACEÆ. LINDL.

CASHEW TRIBE.

Description.—Trees or shrubs, with alternate, extipulate, dotless leaves, and small, sometimes unisexual flowers. Sepals 3-5, united. Petals 3-5, imbricate. Stamens equal in number to the petals, and alternate with them, or twice as many or more, perigynous, or attached to a disk. Ovary one celled; styles and stigmas usually three; ovule solitary, with a long curved cord attached to a basal placenta. Fruit indehiscent, a nut or drupe. Seeds exalbuminous; embryo curved. The order forms a part of the Terebinthaceæ of Jussieu.

Distribution.—Chiefly natives of tropical America, Africa, and India.

Properties.—The plants abound in a resinous, or milky, acrid, and poisonous juice, which often becomes black in drying. The fruit, however, in some cases is eatable.

ANACARDIUM, (*Roxb.*) So named from *ana*, like, and *kardin*, the heart; in allusion to the form of nut.

136. A. OCCIDENTALE, (*Linn.*) Cashew-nut tree. Colamavah, also Moontheree *Tam.* Jidi memidi *Tel.* Hjili badam, Cajoo, *Beng. Hind.*

Remarks.—A small handsome tree; flowers small, reddish coloured, sweet scented; in terminal panicles. A valuable gum is obtained from the trunk of the tree, useful as a good varnish, and making a fair substitute for gum Arabic. It is particularly useful when the depredations of insects require to be guarded against. From the body of the tree is procured by tapping or incision a *milky juice*, which will stain linen of a deep black colour that cannot be washed out again. The *receptacle* of the fruit has an agreeable, acidulous, subastringent flavour, and is eaten like an apple. The juice expressed from it, and fermented, yields a pleasant wine, and distilled affords a spirit, far exceeding arrack or rum. The *Cashew-nut* springs from one end of the receptacle, and has two shells, between which there is a thick inflammable *oil.* This is very caustic, will raise blisters on the skin and has often been very troublesome to those who have in-

cautiously put the nuts to their months to break the shell. The *kernel*, when fresh has a most delicious taste, and abounds with a sweet milky juice. When older, it is usually roasted and then eaten as a moderately good substitute for almonds. An edible oil equal to olive or almond oil is procured from the nuts. The wood is of no value. Native of the East and West Indies.—*W. & A. Prod. p.* 168 ; *Roxb. Fl. Ind.* II. *p.* 312 ; *Hort. Cal. p.* 270 ; *Bal. Cyclop. of Ind.* ; *Gra. Cat B. Pl. p.* 40.

SEMECARPUS, (*Linn.*) So named from *semecon*, a mark, and *carpos*, fruit ; the black, acrid juice being used for marking cotton cloth.

137. S. ANACARDIUM, (*Linn.*) Marking-nut tree. Shayng cottei, also Sharaung-cottei *Tam.* Bhela, *Hind. Beng.*

Remarks.—The wood of this tree is of no use, partly on account of its softness, and partly because its abundance of acrid juice renders it daugerous to work. Bark mildly astringent. The *receptacle* of the fruit roasted in ashes, is eaten by the natives, and tastes like roasted apples, whereas raw, it is astringent and acrid, leaving a painful sensation for some time on the tongue. The nuts afford an acrid and vesicating oil, which is used medicinally. The nut is generally employed to mark all sorts of cotton-cloth. By a mixture of quick lime and water, the colour is improved, prevented from running, and fixed. Flowers white. East Indies.—*W. & A. Prod. p.* 168 ; *Wight's Icon. Fig.* 558 ; *Roxb. Fl. Ind.* II. *p.* 83 ; *Hort. Cal. p.* 271 ; *Bal. Cyclop. of Ind.* ; *Gra. Cat. B. Pl. p.* 41.

MANGIFERA, (*Linn.*) Derived from *mango*, the name of the tree, and *fero* to bear.

138. M. INDICA, (*Lam.*) Mangoe tree. Manga marum, *Tam.* Maumedee chetto, *Tel.* Am, *Beng.*

Remarks.—A tree of large growth, and generally diffused all over India, and in all the warmer parts of Asia. Wood dull grey, porous, pretty durable if kept dry, but soon decaying by exposure to wet. In very large old trees, it acquires a light chocolate colour towards the centre of the trunk and larger branches, and is there hard, closer grained, and much more durable. It is generally used where common light wood is required by coach-builders, cabinet makers and others, being the cheapest wood obtained. From wounds in the bark issues a soft, reddish-brown gum resin, hardening by age, and then much resembling bdellium. Fruit too well known to require more than to be mentioned. The kernels contain much nourishment, but are never used for food, except in famines, when they are cooked in the steam of water, and used as an article of diet. Flower small, yellow.—*W. & A. Prod. p.* 170 ; *Bal. Cyclop. of Ind.* ; *Hort. Cal. p.* 272 ; *Roxb. Fl. Ind.* I. *p.* 641 ; *Gra. Cat. B. Pl. p.* 41.

ODINA, (*Roxb.*) So named from its native name, viz. *O-theya-ma-rum*, so styled in Southern India.

139. O. Wodier, (*Roxb.*) Wodur tree. Annaikarai marum, also Wotheamarum. *Tam.* Joil, *Beng.* Bei-sharam-ke jah'd, *Hind.*

Remarks.—This is one of the most commonly cultivated and best known trees throughout the Peninsula, where, though far from being either ornamental or useful, its quickness of growth from cuttings recommends it; for it is without leaves from the beginning of the year till May or June, and yields no shade in the months when most required. The wood of old trees is close-grained, of a deep reddish mahogany colour towards the centre. The coloured part is useful for many purposes. Flowers very small, growing from the extremities of the branches, in pendulous filiform racemes; fruit kidney-shaped, size of a French bean.—*W. & A. Prod. p.* 171; *Roxb. Fl. Ind.* II. *p.* 293; *Gra. Cat. B. Pl. p.* 42; *Hort. Cal. p.* 275; *Bal. Cyclop. of Ind.*

Spondias, (*Linn.*) The Greek name for a kind of plum; the fruit resembles a plum.

140. S. mangifera, (*Pers.*) Hog-plum tree. Mirreymangi marum, *Tam* Ambra also Amra, *Tel.* Amra, *Beng.* Junglie Aum, Duk.

Remarks.—A large tree with pinnate leaves, deciduous in the cold weather; they have a very peculiar smell when bruised. The wood is soft and of little if any use. From wounds in the bark a large quantity of pure gum exudes, which soon hardens into a substance like gum Arabic. Fruit when ripe, eaten raw; unripe it is pickled, put into curries, made into tarts, &c. Flower small, white. Peninsula of India, and Bengal.—*W. & A. Prod. p.* 73; *Wight's Illustr. Fig.* 76; *Roxb. Fl. Ind.* II. *p.* 451; *Hort. Cal. p.* 143; *Gra. Cat. B. Pl. p.* 42; *Bal Cyclop. of Ind.*

Order XXXVII. LEGUMINOSÆ or FABACEÆ. Juss. Lindl.

Leguminous Tribe.

Description.—Herbs, shrubs, or trees, with alternate, usually compound stipulate leaves. Calyx 5 divided, hypogynous, odd segment inferior (anterior). Petals usually five, sometimes one or more, abortive, papilionaceous or regular, odd petal (if any) superior posterior. Stamens definite or indefinite perigynous, rarely hypogynous, distinct or united in one or more bundles. Ovary superior, one-celled, one or many-seeded, sometimes consisting of one carpel, sometimes two or five. Style and stigma simple. Fruit a legume, or a drupe. Seed with or without albumen; embryo with large cotyledons.

Distribution.—The order is a very extensive one, and the plants belonging to it are found in all parts of the world. They are most abundant in warm regions, and diminish on approaching the poles. Known species 6,650.

Properties.—The leguminous order is not only among the most extensive that are known, but also one of the most important to man, whether we consider the beauty of the numerous species, which are among the gayest-coloured and most graceful plants of every region, or their ap-

plicability to a thousand useful purposes. The Cercis, which renders the gardens of Turkey resplendent with its myriads of purple flowers; the Acacia, not less valued for its airy foliage and elegant blossoms than for its hard and durable wood; the Braziletto, Logwood, and Rosewood of commerce; the Laburnum; the classical Cytius, the Furze and the broom, both the pride of the otherwise dreary heaths of Europe; the Bean, the Pea, the Vetch, the Clover, the Trefoil, the Lucerne, all staple articles of culture by the farmer, are so many Leguminous species. The Gums Arabic and Senegal, Kino, Senna, Tragacanth, and various other drugs, not to mention Indigo, the most useful of all dyes, are products of other species, and these may be taken as a general indication of the purposes to which Leguminous plants may be applied. There is this, however, to be borne in mind, in regarding the qualities of the Order in a general point of view; viz. that upon the whole it must be considered poisonous and that those species which are used for food by man or animals are exceptions to the general rule: deleterious juices of the Order not being in such instances sufficiently concentrated to prove injurious, and being, in fact, replaced to a considerable extent by either sugar or starch, (*Lindl.*) The peculiar properties under the several species.—*Balfour's Outlines of Botany, p.* 426; *Lindl. V. K. p.* 546.

Leguminous plants have been divided into three sub-orders.

Sub-Order I. Papilionaceæ. Petals papilionaceous, imbricated in æstivation, the upper exterior.—*Lindl. V. K. p.* 555.

Sophora, (*R. Brown.*) Altered from *sophera,* the Arabic name of a tree with pea flowers.

141. S. glauca, (*Lesch.*) Smooth leaved Sophora. Flowers middle sized, white, tinged with rose. Neilgherries.—*W. and A. Prod. p.* 179; *Hort. Cal. p.* 120; *Wight's Icon. Fig.* 979.

142. S. tomentosa, (*Linn.*) Downy leaved Sophora. A shrub with pinnate leaves, and pretty yellow flowers, in terminal racemes. The seeds and roots are said to be medicinal. Native of the Moluccas, Mauritius, Ceylon, and both Peninsulas of India. *W. and A. Prod. p.* 179; *Hort. Cal. p.* 105; *Roxb. Fl. Ind.* III. *p.* 316; *Gra. Cal. B. Pl. p.* 44.

Crotalaria, (*Linn.*) Derived from *krotalon,* a castanet; the seeds are in inflated pods, and rattle when shaken.

143. C. juncea, (*Linn.*) Sunn-hemp plant. An annual, straight. Leaves subsessile, linear, lanceolate, hairy, rather obtuse. Racemes terminal. Legumes sessile, club-shaped, many-seeded.

155. I. TINCTORIA, *(Linn.)* Common Indigo or Dyer's Indigo plant.

This plant furnishes the well known dye stuff Indigo. It is extensively cultivated in many parts of India. Flowers small, greenish rose. Native place uncertain. —*W. and A. Prod. p.* 232 ; *Wight's Icon. fig.* 355 ; *Roxb. fl. Ind.* III. *p.* 379 ; *Hort. Cal. p.* 212 ; *Bal. Cyclop. of Ind.*

156. I. TRITA, *(Linn.)* Oval leaved Indigofera. A herbaceous erect growing plant, with trifoliate leaves, flowers small, reddish green. Common.—*W. and A. Prod p.* 203 ; *Wight's Icon. fig.* 365. ; *Roxb. fl. Ind.* III. *p.* 371 ; *Hort. Cal. p.* 212 ; *Gra. Cat. B. pl. p.* 46.

CLITORIA, (*Linn.*) From *clitoris*, an anatomical term ; a resemblance to the configuration of which has been fancied to exist in the flower.

157. C. TERNATEA, (*Linn.*) Wing-leaved Clitoria. Neeluparajita, *Beng.* A shrubby twining perennial plant, with pinnate leaves, and pretty blue flowers. Common in every hedge all over India, and in flower the greater part of the year.—*W. and A. Prod. p.* 205 ; *Roxb. fl. Ind.* III. *p.* 321. ; *Hort. Cal. p.* 213. ; *Gra. Cat. B. pl. p.* 47.

158. C. *b.* ALBIFLORA, White flowered, *var.* Shwet-uparajita, *Beng.* Flowers white. Common.—*Hort. Cal. p.* 213.

159. C. TERNATEA, PLENUS. Double flowering wing-leaved Clitoria. This is a very pretty variety, well adapted for trellis work. Flowers large, blue.

160. C. PLUMIERI, *(Turp.)* Plumier's Clitoria. Flowers large, white, tinged with crimson, rather handsome.—*Hort. Cal.* p. 213.

SESBANIA, (*Pers.*) From *Sesban*, the Arabic name of *S. ægyptiaca*.

161. S. ÆGYPTIACA. (*Pers.*) Egyptian Sesbania. Junyunteel, *Beng.* A small tree of very quick growth, the wood is said to make the best charcoal for gunpowder. *Roxb.* The leaves are

used medicinally.—*W. & A. Prod. p.* 214 ; *Wight's Icon. fig.* 32 *Hort. Cal. p.* 216 : *Gra. Cat. B. pl. p.* 47 ; Æschynomene Sesban ; *Roxb. fl. Ind.* III. *p.* 332.

AGATI, *Rheed.* Agate is the name in the Sanscrit language.

162. A. GRANDIFLORUM, (*Desr.*) Great flowered Agati. Agathee, *Tam.* Agathi or Anisay,, *Tel.* Buko, *Beng.*

Remarks.—A very common tree of rapid growth, generally found in the neighbourhood of temples and villages. It is cultivated for the sake of its large flowers and pods, both of which are eaten by the natives. This tree is also much cultivated in Betel gardens, for shade and as a trellis for the support and shelter of the *Piper Betel.—W. & A. Prod. p.* 215 ; *Gra. Cat. B. pl. p.* 48 ; *Hort. Cal.* 216 ; *Bal. Cyclop. of Ind.*

163. A. *a.* ALBIFLORUM. White flowered variety.

164. A. *b.* COCCINEUM. Scarlet flowered variety.

ÆSCHYNOMENE, (*Linn.*) So named from *aischuno,* some of the species being a little sensitive.

165. Æ. INDICA, (*Linn.*) Indian Æschynomene. An annual; flowers small, reddish yellow. Native of Coromandel, Bombay, Nepal.—*W. & A. Prod. p.* 219; *Hort. Cal. p.* 216; *Wight's Icon. fig.* 405; *Gra. Cat. B. pl. p.* 48; Hedysarum Neli-tali; *Roxb. fl. Ind.* III. *p.* 365.

ZORNIA, (*Gmelin.*) In honour of John Zorn, a botanical author.

166. Z. ANGUSTIFOLIA, (*Linn.*) Two leaved Zornia. An annual, flowers yellow. Coromandel.—*W. and A. Prod. p.* 217; *Gra. Cat. B. pl. p.* 48 ; *Hort. Cal. p.* 219.

SMITHIA, (*H. Kew.*) In honour of the late Sir James Edward Smith, M.D., F.R.S., &c. Founder of the Linnæan Society, Professor of the Linnæan herbarium, and Author of numerous well known botanical works.

167. S. SENSITIVA, (*Ait.*) Annual Smithia. Kulkushunda, *Beng.* An annual, flowers small, yellow, makes excellent hay.—

Roxb. fl. Ind. III. *p.* 342 ; *W. and A. Prod. p.* 220; *Hort. Cal. p.* 220 ; *Gra. Cat. B. pl. p.* 48.

Uraria, (*Desr.*) So named from *oura*, a tail, from the form of the bracts.

168. U. picta, (*Desr.*) Painted leaved Uraria. Sunkurjuta, *Beng.* A shrubby erect plant, with long terminal racemes of small, pretty, red flowers. Native of Coromandel, Bengal, &c.—*W. and A. Prod. p.* 220 ; *Hort. Cal. p.* 221 ; *Gra. Cat. B. pl. p.* 49 ; Doodia picta ; *Roxb. fl. Ind.* III. *p.* 368.

Desmodium, (*D.C.*) From *desmos*, a bond ; alluding to the slightly connected joints of the loment ?

169. D. triquetrum, (*D. C.*) Triangular-stalked Desmodium. Flowers small, pale violet. Native of Ceylon, Coromandel, and other parts of India.—*W. & A. Prod; Hort. Cal. p.* 221 ; *Gra. Cat. B. pl. p.* 49 ; Hedysarum alatum ; *Roxb. fl. Ind.*, III. *p.* 348.

170. D. cephalotes, (*Wall.*) A small tree. Flowers small, greenish white. Native of the Mauritius, Travancore, Prome, Pegu, &c.—*W. &. A. Prod. p.* 224 ; *Wight's Icon. fig.* 373 ; *Hort. Cal. p.* 221 ; Hedysarum cephalotes; *Roxb. fl. Ind.* III *p.* 360.

171. D. latifolium, (*D. C.*) Broad leaved Desmodium. A shrubby plant. Flowers purple, fragrant.—*W. and A. Prod. p.* 225 ; *Wight's Icon. fig.* 270 ; *Hort. Cal. p.* 221.

172. D. gyrans, (*D. C.*) Moving plant. A curious suffruticose plant, with simple and ternate leaves ; flowers pale yellow, tinged with blue. The lateral leaflets have a singular power of oscillatory motion. Both Peninsulas of India, Bengal.—*W. and A. Prod. p.* 227 ; *Wight's Icon. fig.* 294 ; *Hort. Cal p.* 222 ; *Gra. Cat. B. pl. p.* 49 ; Hedysarum gyrans, *Linn* ; *Roxb. fl. Ind.* III. *p.* 351.

173. D. POLYCARPUM, (*D. C.*) Many seeded Desmodium.—*W. & A. Prod. p.* 227 ; *Wight's Icon. fig.* 406.

174. D. PANICULATUM, (*D. C.*) Panicled Desmodium.

CICER, (*Linn.*) So named from *kykis*, strength, in reference to its qualities.

175. C. ARIETINUM, (*Linn.*) Chickpea, Bengal gram plant. Kadalay, *Tam.* Sanegaloo, *Tel.* Chenna, *Hind.* Boot-kalay, Chuna. *Beng.*

An annual ; flowers bluish purple ; extensively cultivated in many parts of India for feeding horses with. It is also used as an article of food by the Natives. Native of Spain, Italy, Levant.—*W. and A. Prod. p.* 235 ; *Wight's Icon. fig.* 25 ; *Roxb. fl. Ind.* III. *p.* 824 ; *Hort. Cal. p.* 226 ; *Gra. Cat. B. pl. p.* 50.

VICIA, (*Linn.*) So named from *vinceo*, I bind together, because some of the species bind other plants by their tendrils.

176. V. FABA, (*Linn.*) Garden bean. An annual, flowers large white, striped and dotted with black. Cultivated in India does little good at Madras. Native of the environs of the Caspian Sea.—*Hort. Cal. p.* 226 ; Faba vulgaris, *Monch.*

PISUM. (*Linn.*) from *pis*, the Celtic word for pea; whence the Latin *pisum*.

177. P. SATIVUM, (*Linn.*) Common pea. Vella pattanee, *Tam.* Pattaneloo, *Tel.* Buttanee, *Hind.* Muttur, *Beng.*

Remarks.—The pea is the most valuable of culinary legumes. Like most domestic plants of great antiquity, its native country is unknown, though it is commonly referred to the South of Europe. The varieties of the pea are numerous, the variety known as the Bangalore pea, is the best for cultivating at Madras. Flowers large, white.

LATHYRUS, (*Linn.*) From *la*, and *thouros*, any thing exciting, in allusion to the medical qualities of the seeds.

178. L. ODORATUS, (*Linn.*) Sweet pea. This is a much esteemed annual ; flowers large, variegated, sweetly fragrant. Native of Sicily.

ABRUS, (*Linn.*) From *abros*, soft ; in allusion to the delicacy of the leaves.

179. A. PRECATORIUS, (*Linn.*) Wild Liquorice plant. Goondamunnie, *Tam.* Ghooriegheenza, *Tel.* Goonch, *Hind.*

Remarks.—Of this creeper there are several varieties, with seeds scarlet, black, and white. Those of a bright scarlet colour, with a jet black spot at the top, are used by jewellers and druggists as weights, each weighing almost uniformly one grain; also for beads and rosaries, whence the specific name. The roots abound in sugar and are employed as a substitute for liquorice. Common.—*W. & A. Prod. p.* 236; *Roxb. fl. Ind.* III *p.* 257; *Bal. Cyclop. of Ind.*; *Gra. Cat. B. pl. p.* 51; *Hort. Cal. p.* 228.

FLEMINGIA, (*Roxb.*) So named in honour of Dr. Fleming of Bengal.

180. F. CONGESTA, (*Roxb.*) Crowded-spiked Flemingia.

A shrub; flowers smallish, pale rose, crimson-veined. Native of both Peninsulas of India. Bengal.—*W. and A Prod. p.* 241; *Wight's Icon. fig.* 390; *Roxb. fl. Ind.* III. *p.* 340 · *Hort. Cal. p.* 229.

181. F. STROBILIFERA, (*R. Br.*) Beech-leaved Flemingia.

A shrubby plant; leaves simple: flowers in terminal racemes; imbricated with large inflated kidney-shaped bracts. Native of Ceylon, Coromandel, Penang, Assam, &c.—*W. and A. Prod. p* 243; *Wight's Icon fig.* 267; *Hort. Cal. p.* 229; *Gra. Cat. B. pl. p.* 51; Hedysarum strobilifera; *Roxb. fl. Ind.* III. *p.* 350.

PHASEOLUS, (*Linn.*) From *Phaselus*, a little boat; fancied resemblance in the pods.

182. P. VULGARIS, (*Linn.*) French Bean, Common Kidney Bean Haricot. Cultivated in Gardens. Flowers middle-sized, white. Native of Cashmere and Cabul.—*W. and A. Prod p.* 243; *Roxb. fl. Ind.* III. *p.* 287; *Hort. Cal. p.* 229; *Gra. Cat. B. pl. p.* 51.

183. P. LUNATUS, (*Linn.*) Country Haricot. Cultivated. Flowers small, greenish. Native of the Peninsula of India. Bengal.—*W. and A. Prod. p.* 244; *Roxb. fl. Ind.* III. *p.* 287 *Hort. Cal. p.* 230; *Gra. Cat. B. pl. p.* 51.

184. P. MUNGO, (*Linn.*) Green gram mash. Oolandoo, *Tam.* Woothooloo, *Tel.* Hali-moog, *Beng.*

An annual cultivated by the Natives, to whom the grain is of great importance, especially in times of famine. Flowers largish, greenish yellow.

Native place unknown.—*W. and A. Prod. p.* 245; *Roxb. fl. Ind.* III. *p.* 292; *Hort. Cal. p.* 230; *Gra. Cat. B. pl. p.* 51.

185. P. TRILOBUS, (*Ait.*) Three-lobed Phaseolus.

A perennial; flowers small, yellow; seeds gathered and eaten by the poor. The leaves are said to be tonic and sedative, and are used in cataplasms to weak eyes. Native of Coromandel. Common in the Deccan and Bengal. Common about Madras.—*W. & A. Prod. p.* 246; *Wight's Icon. fig* 94; *Roxb. fl. Ind.* III. *p.* 298; *Hort. Cal. p.* 231; *Bal. Cyclop. of Ind.*; *Gra. Cat.* B. *pl. p.* 52.

DOLICHOS, (*Linn.*) So named from *Dolichos*, long; in reference to the long twining stems.

186. D. UNIFLORUS, (*Lam.*) Horse-gram plant. Kolloo, *Tam.* Woolavaloo, *Tel.* Coolthee, *Hind.* Kooltho-kulay, *Beng.* This is the common food of horses on the coast of Coromandel, and in times of scarcity, as an article of foo[illegible] among the natives. Flowers small, sulphur coloured; cultivated [illegible] the Deccan and Bengal.

LABLAB, (*Adanson.*) *Lablab* is the Arabic name of *convolvulus*, with which this has no affinity except in the twining habit.

187. L. VULGARE, (*Savi.*) Black seeded Dolichos. Segapoo mochay, *Tam.* Anoomooloo, *Tel.*

The young pods of this plant are used as a substitute for French beans. The ripe beans are used by the natives in their curries. Cultivated in the Moluccas, both Peninsulas of India, Bengal, Ceylon, Assam, &c.—*W. & A. Prod. p.* 250; *Hort. Cal. p.* 233; *Gra. Cat.* B. *pl. p.* 53; *Wight's Icon. fig.* 57; Dolichos Lablab. *L. Roxb. fl. Ind.* III. *p.* 305.

PSOPHOCARPUS, (*Necker.*) From *psophos*, a sound, and *karpos*, a fruit; the seeds, when ripe, make a rattling noise in the pod if shaken.

188. P. TETRAGONOLOBUS, (*D. C.*) Goa Bean. Chevaux de Frize Bean. Chari-kona-shin, *Beng.*

Remarks.—The pods are used like French beans. Cultivated in India and the Mauritius. In the latter place it is called, *Pois carre.*—*W. & A. Prod. p.* 252; *Hort. Cal. p.* 234; *Gra. Cat.* B. *pl. p.* 52; Dolichos tetragonolobus, *L.*; *Roxb. fl. Ind.* III. *p.* 305.

CANAVALIA, (*D. C.*) Canavali is its name in Malabar.

189. C. GLADIATA, (*D. C.*) Sabre-podded Canavalia. Segapoo Thumbetten, *Tam.* Yerrav Thumbetten kava. *Tel.* Sal

Kudsumbal, *Hind.* Makhunshim, *Beng.* The half grown pods afford a palatable vegetable. Flowers large, white.—*W. and A. Prod. p.* 253; *Hort. Cal. p.* 234; *Gra. Cat. B. pl. p.* 52; Dolichos gladiatus, *Roxb. fl. Ind.* III. *p.* 300.

190. C. VIROSA, (*W. and A.*) Wild Sword Bean. Kaloshim. Kat-shim, *Beng.* Flowers large, rose purplish. Native of Cochin China, Peninsula of India, Bengal, &c.—*W. and A. Prod. p.* 253; *Hort. Cal. p.* 235; *Gra. Cat. B. pl. p.* 53; Dolichos virosus; *Roxb. fl. Ind.* III. *p.* 301.

MUCUNA, (*Adans.*) So styled from the Brazilian name of one of the species.

191. M. PRURITUS, (*Hooker.*) Cowitch plant, Poonakalee, *Tam.* An annual twining plant with pendulous racemes of dark coloured flowers. Pods shape of the letter *S.* Native of the Moluccas, both Peninsulas of India, Bengal, Assam, &c.—*W. and A. Prod. p.* 255; *Hort. Cal. p.* 235; *Gra. Cat. B. pl. p.* 53; Carpopogon pruriens; *Roxb. fl. Ind.* III. *p.* 283.

192. M. MONOSPERMA, (*D. C.*) One-seeded Mucuna. A large perennial twining plant. Legume one-seeded, and armed with very stiff ferruginous hairs. Flowers large, dark purple. Native of Coromandel, Bombay, &c.—*W. and A. Prod. p.* 254; *Wight's Icon. fig.* 35; *Hort. Cal. p.* 235; *Gra. Cat. B. pl. p.* 53; Carpopogon monospermum; *Roxb. fl. Ind.* III. *p.* 283.

CAJANUS, (*D. C.*) So styled from its Malabar name *Catjang.*

193. C. INDICUS, (*Spreng.*) Pigeon pea, Dholl. Thovaray, *Tam.* Cunthaloo, *Tel.* Thour, *Hind.* Urur, *Beng.*

A shrub, leaves trifoliate, flowers yellow. The seeds are much esteemed by the Natives; commonly cultivated. Native of Ceylon, both Peninsulas, Bengal, Assam.—*W. and A. Prod. p.* 256; *Hort. Cal. p.* 236; *Gra. Cat. B. pl. p.* 53.

ERYTHRINA, (*Linn.*) From *erythros*, red; in reference to the colour of the flowers.

194. E. INDICA, (*Lam.*) Indian Coral tree. Moorkoo marum, *Tam.* Badida chittoo, *Tel.* Palita mundar, *Beng.*

Remarks.—This is a pretty large tree, common all over India and the Islands, flowering at the beginning of the hot season; seeds ripening in June and July. This tree is used to support the black pepper vine. Wood light and soft, much used by toy-makers, also generally employed for constructing Catamarans. Flowers large, dark purple scarlet. There is also a variety with white flowers.—*W. and A. Prod. p.* 260; *Wight's Icon. fig.* 58; *Roxb. fl. Ind.* III. *p.* 249; *Hort. Cal. p.* 237; *Gra. Cat. B. pl. p.* 54; *Bal. Cyclop. of Ind.*

195. E. BLAKII, (*N. H.*) Blake's Erythrina. A shrub, with very handsome dark scarlet flowers.

196. E. CRISTA GALLI, (*Linn.*) Flowers large, scarlet. A native of Brazil.—*Hort. Cal. p.* 237.

BUTEA, (*Roxb.*) In compliment to John, Earl of Bute, a lover and patron of Botany.

197. B. FRONDOSA, (*Roxb.*) Palas Kino tree. also Dhak Kino tree. Porasum marum, *Tam.* Moduga chettoo, *Tel.* Pulash, *Beng.* Dhak, *Hind.*

Remarks.—This is a small tree: from fissures and wounds in the bark, issues, during the hot season, a beautiful red juice, soon hardening into a ruby coloured, brittle, astringent *gum*; which, however soon loses its colour by exposure to the air. Seed considered anthelmintic by the natives. This tree when abundantly in flower presents a gorgeous sight. In mass the inflorescence resembles sheets of flame, and individually the flowers are eminently beautiful, the bright orange red petals contrasting brilliantly against the jet black velvety calyx: an infusion of the flowers dye cotton, previously prepared with alum, a bright yellow, which can be changed by an alkali into deep reddish orange, *Roxb.* Native of the Circars, Negapatam, Travancore, Concans, Bengal, Chittagong, &c.—*W. & A. Prod. p.* 261; *Roxb. fl. Ind.* III. *p.* 244: *Hort. Cal. p.* 238; *Bal. Cyclop. of Ind.*; *Gra. Cat. B. pl. p.* 54.

PONGAMIA, (*Lam.*) From the Malabar name *Pongam.*

198. P. GLABRA, (*Vent.*) Smooth-leaved Pongamia. Poonga marum, *Tam.* Canaga chettoo, *Tel.* Kurunja, *Beng.*

Remarks.—A graceful and excellent tree for avenues: in good soil, it attains a large size; has beautifully varnished green leaves all the year round. The boughs and leaves are extensively used as manure. Wood light, white, firm, used for a variety of economical purposes; leaves, eaten by cattle. Seeds yield by expression a fixed oil, which the Natives use externally in eruptive diseases. Flowers middle-sized, bright purple. Native of Coromandel, Concan, Deccan, Amherst, Penang, Bengal, Assam, &c.—*W. and A. Prod. p.* 262; *Wight's Icon. fig.* 59; *Hort. Cal. p.* 239; *Gra. Cat. p.* 55; *Bal. Cyclop. of Ind.*; Galedupa Indica, *Lam*; *Roxb. fl. Ind.* III. *p.* 239.

199. BRACHYPTERUM SCANDENS, (*Benth.*) Climbing Brachypterum.

Remarks.—A very beautiful scandent shrub, with dark green polished leaves, and long drooping racemes of light rose coloured flowers. This shrub is well adapted for covering large trellises. Native of the Coromandel Coast, Travancore, jungle tracts of the Concan, Chittagong, Bengal, &c.—*W. and A. Prod. p.* 264 ; *Wight's Icon. fig.* 275 ; *Hort. Cal. p.* 240 ; Dalbergia scandens, *Roxb. fl. Ind.* III. *p.* 232 ; *Gra. Cat. B. pl. p.* 55.

DALBERGIA, (*Linn.*) In honour of N. Dalberg, a Swedish botanist.

200. D. SISSOO, (*Roxb.*) Sissoo tree.

Remarks.—This is a large and rather handsome timber tree. Wood very strong, greyish brown, with dark coloured veins, but not durable. The tree grows rapidly, is propagated and reared with facility, and it early attains a good working condition of timber. Flowers small, yellowish white. Native of Coromandel. Kennery jungles, Goozerat, Bengal, &c. —*W. and A. Prod. p.* 264 ; *Roxb. fl. Ind.* III, *p.* 223 ; *Hort. Cal. p.* 241 ; *Bal. Cyclop. of Ind.* ; *Gra. Cat. B. pl. p.* 55.

PTEROCARPUS, (*Linn.*) So named from *pteron*, a wing, and *karpos*, a fruit ; the pods are girded with a broad wing.

201. P. MARSUPIUM, (*Roxb.*) Kino tree. Vengai marum, *Tam.* Peet-sal, *Beng.*

Remarks.—This is a very large tree, affording excellent shade and timber, the latter is of a dark brown colour, and dyes yellow ; for building purposes it is almost as good as teak, but cannot be used for lintels of doors, windows, &c., as it discolors the whitewash. It yields from incisions a large quantity of blood-red juice, which, on being simply exposed to the sun, hardens and quickly cracks into little angular masses, and crumbling fragments, which constitutes, without further preparation, the *kino* of the shops. Flowers smallish, white, tinged with yellow. Native of Columala. Common on the Neilgherries, and some parts of the Concan. Assam.— *Roxb. fl. Ind.* III, *p.* 234 ; *W. and A. Prod. p.* 266 ; *Hort. Cal. p.* 242 ; *Bal. Cyclop. of Ind.* ; *Gra. Cat. B. pl. p.* 56.

202. P. DALBERGIOIDES, (*Roxb.*) Andaman Red-wood tree.

Remarks.—This handsome tree is a native of the Andaman Islands, where it grows to an immense size, the trunk sometimes measuring above fifteen feet in circumference. Wood not unlike mahogany, but more heavy, red and coarse in the grain. That of the *root* beautifully variegated, closer grained, and darker coloured. Flowers smallish, yellow, fragrant.—*Roxb. fl. Ind.* III, *p.* 236 ; *W. and A. Prod. p.* 267 ; *Wight's Icon. fig.* 246 ; *Hort. Cal. p.* 242.

CASTANOSPERMUM, (*Hooker.*) The seeds taste like chestnuts ; whence the name, from *castanea*, a chestnut, and *sperma*, seed.

203. C. AUSTRALE, (*Cunningham.*) Moreton Bay, Chestnut tree.

A highly ornamental tree; flowers saffron coloured. The seeds are eaten by the Natives about Moreton Bay on all occasions, and, when roasted, have somewhat the flavour of Spanish Chestnuts; and even Europeans, who have subsisted on them for two or three days together, have found no bad effects from them when roasted.—*Loud. Encyclop. of plants, p.* 1190.

ARACHIS, (*Linn.*) So named from *A*, privative, and *rachis*, a branch, the plants being branchless.

204. A. HYPOGEA, (*Linn.*) Earth-nut or Manilla-nut plant Vair or Nelay cadalay, *Tam.* Vair Sanegaloo, *Tel.* Atke-kulay, Moong-p'hullee, *Beng.*

Remarks.—This plant is particularly remarkable from the manner in which its fruit is produced. Instead of hanging from among the leaves in the manner of other plants, this conceals itself in the earth, in which it is deeply buried at the period when the fruit becomes ripe, whence the name. When mature, it is a pale-yellow wrinkled oblong pod, often contracted in the middle, and containing two or three seeds the size of a hazel-nut. These are considered a valuable article of food in Africa and the tropical parts of Asia and America, and they are sold in the streets and bazars of every town in India. In flavour the nuts are as sweet as almonds, and they yield when pressed, clear straw-coloured oil, in no respects inferior to that of olives. The oil cake affords excellent food for cattle. Flowers small, bright yellow. Native of the hot parts of America. Domesticated in Africa, Asia, and S. Europe.—*W. and A. Prod. p.* 280; *Roxb. fl. Ind.* III, *p.* 280; *Bal. Cyclop. of Ind.*; *Hort. Cal. p.* 243; *Gra. Cat. B. pl. p.* 60.

Sub-Order II. CÆSALPINIEÆ.—Petals in æstivation imbricated, the uppermost interior.—*L. V. K. p.* 555.

CÆSALPINIA, (*Plumier.*) In memory of Andreas Cæsalpinus, chief physician to Pope Clement VIII.

205. C. SAPPAN, (*Linn.*) Sappan-wood tree. Bukum, *Beng.*

Remarks.—This tree affords the red wood of commerce, which is extensively exported as a dye wood. The wood is also used medicinally. Flowers largish, yellow. Native of the Moluccas, Ceylon, Coromandel Bengal.—*W. and A. Prod. p.* 282; *Roxb. fl. Ind.* II, *p.* 357; *Hort. Cal. p.* 244; *Bal. Cyclop. of Ind.*

206. C. SEPIARIA, (*Roxb.*) Mysore Thorn. A scandent shrub, flowers largish, bright sulphur coloured.—*W. and A. Prod. p.* 282; *Wight's Icon. fig.* 37; *Roxb. fl. Ind.* II, *p.* 360.

207. C. CORIARIA, (*Wild.*) American Sumach.

Remarks.—This valuable tree was introduced into India from South America, and is now grown at several stations in the Madras Presidency. The seed pods have been extensively used for tanning leather, and for this purpose are considered superior to all the Indian astringents. The pods are indifferently called Libi Libi and Dibi Dibi, by which appellations they are known in commerce. Flowers small, whitish, fragrant.—*Bal. Cyclop. of Ind*; *Hort. Cal. p.* 245.

POINCIANA, (*D. C.*) So named in honour of M. de Poinci, once Governor of the Antilles, and a patron of botany.

208. P. PULCHERRIMA, (*Linn.*) Barbadoes flower, Fence.

Remarks.—This beautiful plant decorates the garden with its bright scarlet flowers throughout the year, but is most beautiful during the cold season. The leaves and flowers are used medicinally. Native of the Moluccas, both Peninsulas of India and Bengal.—*W. and A. Prod. p.* 282; *Roxb. fl. Ind.* II, *p.* 355; *Hort. Cal. p.* 245; *Bal. Cyclop. of Ind.*

209. P. *b.* CONCOLOR. A variety of the former species, with bright yellow flowers.—*Hort. Cal. p.* 245.

210. P. ELATA, (*Linn.*) Smooth Poinciana. A small, ornamental tree. Leaves extensively used for manuring indigo fields in Cuddapah. Flowers large, pale yellow. Native of Coromandel, Malabar, Goozerat, &c.—*W. & A. Prod. p.* 282; *Roxb. fl. Ind.* II, *p.* 355; *Gra. Cat. B. pl. p.* 61; *Bal. Cyclop. of Ind.*

211. P. REGIA, (*Bojer.*) Royal Poinciana.

Remarks.—This most magnificent tree was introduced to the Madras garden from Calcutta by Dr. Wallich, and it is now in almost every garden, where its gorgeous flowers render it a conspicuous object during the hottest months of the year. Flowers very large, bright scarlet, variegated with yellow. Native of Madagascar.—*Hort. Cal. p.* 245.

212. P. GILLIESII, (*Hooker.*) Mal de ojos, *Port.* A small shrub, with elegant foliage, and large sulphur—coloured flowers, of a sickly disagreeable odour.—*Hort. Cal. p.* 245.

HÆMATOXYLON, (*Linn.*) So named from *haima,* blood, and *xylon,* wood; logwood is well known for its red colouring principle.

213. H. CAMPECHIANUM, (*Linn.*) Log-wood tree.

Remarks.—A middle sized tree : affords the well known dye stuff Logwood, which is exported from America. Flowers small, purple-sulphur, sweet scented. Native of Campeche, cultivated in Jamaica.—*Hort. Cal. p.* 246 ; *Bal. Cyclop. of Ind.*

PARKINSONIA, (*Linn.*) In honour of John Parkinson, a London Apothecary.

214. P. ACULEATA, (*Linn.*) Jerusalem Thorn.

Remarks.—This is a small graceful tree, with pretty yellow flowers in loose pendulous racemes, grows readily from seed, and is well adapted for hedge rows. The stem from which the leaves spring is capable of being converted into a white fibre and has been used for paper making (*Riddell.*) Native of the West Indies, S. America ; domesticated in India.—*W. and A. Prod. p.* 284 ; *Hort. Cal p.* 264 ; *Bal. Cyclop. of Ind.*

CERATONIA, (*Linn.*) From *keration*, a horn or pod ; in allusion to the shape of the pods.

215. C. SILIQUA, (*Linn.*) Carob tree.

Remarks.—This is a small tree : native of the South of Europe and the Levant. The dry pulp in which the seeds are buried is very nutritious, and is supposed to have been the food of St. John in the wilderness, wherefore it is called the Locust tree, and St. John's Bread. Singers are said to chew this fruit for the purpose of improving their voice. The crop of the Carob tree is very abundant, some of them yielding from 800 to 900 pounds weight of pods, they are much used in the countries where they grow for feeding horses and cattle.—*Hort. Cal. p.* 246 ; *Lindl. V. K. p.* 549.

JONESIA, (*Roxb.*) So named in honor of the distinguished scholar and botanist, Sir William Jones.

216. J. ASOCA, (*Roxb.*) Asoca tree. Ushok, *Beng.*

Remarks.—This is one of the finest trees in India, its orange blossoms present a gorgeous appearance when it is in flower. East Indies.—*W. and A. Prod. p.* 284 ; *Wight's Icon. fig.* 206 ; *Hort. Cal.* 246 ; *Roxb. fl. Ind.* II; *p.* 218.

TAMARINDUS, (*Linn.*) So named from the Arabic word *tamar*, date, and *Indus*, Indian date.

217. T. INDICA, (*Linn.*) Tamarind tree. Poolia marum, *Tam.* Chinta chettoo, *Tel.* Tintooree, Amli, *Beng.*

Remarks.—This tree is one of the largest in India, with a most extensive large shady head, the wood hard, very durable and most beautifully veined. Leaves eaten by the natives in their curries ; the pulp of the fruit is universally known ; the *seeds*, like those of the mangoe, eaten in times of scarcity and famine ; reduced to a fine powder and boiled they form a tenacious paste, and a strong wood-cement, if thin glue be added.

The paste simply smeared on the skin has the property of rapidly promoting suppuration in indolent boils. Flowers middle sized, somewhat orange, streaked with scarlet, sweet-scented.—*W. and A. Prod. p.* 285; *Roxb. fl. Ind.* III, *p.* 215; *Hort. Cal. p.* 247; *Bal. Cyclop. of Ind.*

CATHARTOCARPUS, (*Pers.*) So named from *kathairo*, to purge, and *karpos*, fruit.

218. C. FISTULA, (*Pers.*) Purging Cassia. Konnei marum or Sara-konneimarum, *Tam.* Banur-lati-gach, *Beng.*

Remarks.—This tree is uncommonly beautiful, few surpassing it in the elegance of its numerous, long pendulous racemes of large, bright yellow flowers, intermixed with the young lively green foliage (*Roxb.*) The sweetish secretion surrounding the seeds is slightly aperient. Native of the Moluccas. Both Peninsulas of India, Bengal, Assam, &c.—*Hort. Cal. p.* 247; *Bal. Cyclop. of Ind*; Cassia Fistula, (*Linn.*);—*W. and A Prod. p.* 285; *Roxb. fl. Ind.* II, *p.* 333.

219. C. ROXBURGHII, (*D. C.*) Roxburgh's Cassia.

A highly ornamental tree, in form much resembling the weeping ash. Flowers middle-sized, nearly inodorous, more or less rose-coloured. Native of the Gingie hills, Ceylon.—*W. and A. Prod. p.* 286; *Wight's. Illustr. fig.* 83; Cathartocarpus Marginatus (*G. Don.*); *Hort. Cal. p.* 248; Cassia Marginata, *Roxb. fl. Ind.* II; *p.* 338.

CASSIA. (*Linn.*) From the latin word, which is derived from the Hebrew word *ketxioth.*

220. C. BICAPSULARIS, (*Linn.*) Six leaved Cassia. Flowers large, gold coloured. A Native of the West Indies, S. America. Domesticated in India.—*W. and A. Prod. p.* 286; *Hort. Cal. p.* 248; Senna bicapsularis; *Roxb. fl. Ind.* II; *p.* 242.

221. C. SOPHORA, (*Linn.*) Round-podded Cassia. Poonaverie, *Tam.* Kalkasoonda, *Beng.*

Remarks.—An annual, flowers middle-sized, yellow. Leaves eaten by the Natives in their curries. Native of the Moluccas, Ceylon, both Peninsulas of India, Bengal, Assam, &c.—*W. and A. Prod. p.* 287; *Hort. Cal. p.* 248; Senna sophora, *Roxb. fl. Ind.* II; *p.* 347.

222. C. ALATA, (*Linn.*) Ring-worm shrub. Seemei Aghatee, *Tam.* Seema Avasee, *Tel.* Dadoomurdun, *Beng.*

Remarks.—A shrub, with large, orange yellow flowers. The fresh leaves bruised and mixed with lime juice are deemed a powerful specific in ring-worm. The whole plant is used by the Tamuls as a remedy in poisonous bites, and as a general tonic. Native of the West Indies, cul-

tivated in India.—*W. and A. Prod. p.* 287 ; *Wight's Icon. fig.* 263 ; *Hort. Cal. p.* 249 ; *Bal. Cyclop. of Ind.* ; Senna elata ; *Roxb. fl. Ind.* II ; *p.* 349.

223. C. GLAUCA, (*Linn.*) Sulphur-flowered Cassia. A small tree, with large, sulphur-coloured flowers. Native of Coromandel, Ava, cultivated in gardens.—*W. and A. Prod. p.* 287 ; *Hort. Cal. p.* 248.

224. C. AURICULATA, (*Linn.*) Tanner's Cassia. Avaray puttay, *Tam.* Tanghedoo, *Tel.*

Remarks.—This is a very common shrub, with large, bright yellow flowers. The bark is astringent and is much used by the Natives all over India for tanning leather. Branches made into Native tooth-brushes. Native of Ceylon, Coromandel, &c.—*W. and A. Prod. p.* 290 ; *Hort. Cal. p.* 250 ; Senna auriculata ; *Roxb. fl. Ind.* II, *p.* 359.

225. C. TORA, (*Linn.*) Oval-leaved or Fœtid Cassia. Thagarei, *Tam.* An annual; flowers small, yellow. Leaves purgative, much used for adulterating senna. Common all over the plains of India.—*W. and A. Prod. p.* 390 ; *Hort. Cal. p.* 250 ; *Bal. Cyclop. of Ind.*

BAUHINIA, (*Plumier.*) In memory of John and Caspar Bauhin, botanists of sixteenth century.

226. B. ACUMINATA, (*Linn.*) Taper-pointed Mountain Ebony. Maudareh, *Tam.* Kanchun, *Beng.* A shrub with beautiful, large, pure white flowers. Native of the Mauritius, Ceylon, both Peninsulas of India, Bengal, &c.—*W. and A. Prod. p.* 295 ; *Roxb. fl. Ind.* II, *p.* 324 ; *Hort. Cal. p.* 253.

227. B. VARIEGATA, (*Linn.*) Variegated Mountain Ebony. An ornamental tree.—*W. and A. Prod. p.* 296 ; *Hort. Cal. p.* 253.

228. B. *a.* PURPURASCENS. A small tree, with beautiful purple flowers.—*Hort. Cal. p.* 253.

229. B. *b.* CANDIDA. White Mountain Ebony. A small tree, flowers large, white.—*Hort. Cal. p.* 253 ; Bauhinia candida ; *Roxb. fl. Ind.* II, 318.

230. B. PURPUREA, (*Linn.*) Purple Mountain Ebony. Deva Kanchun. A largish tree, flowers large, deep rose, fragrant. Native of the Mauritius, Coromandel mountains, &c.—*W. and A. Prod. p.* 296; *Roxb. fl. Ind.* II, *p.* 320; *Hort. Cal. p.* 254; *Bal. Cyclop. of Ind.*

231. B. DIPHYLLA, (*Buch.*) Two-leaved Mountain Ebony. A small tree, flower middle-sized, pure white.—*Hort. Cal. p.* 254.

232. B. RICHARDIANA, (*Wall.*) Richard's Bauhinia. Introduced from Madagascar.—*Hort. Cal. p.* 255.

233. B. TOMENTOSA, (*Linn.*) Tomentose Mountain ebony. A shrub, flowers sulphur coloured. The dried buds and flowers are used in dysentery. Native of Ceylon, Malabar, and Coromandel. —*W. and A. Prod. p.* 295; *Roxb. fl. Ind.* II, *p.* 323.

Sub-Order III. MIMOSEÆ. Corolla Valvate in Æstivation.

MIMOSA, (*Linn.*) From *mimos*, a mimic; the action of the leaves of many of the species resemble animal sensibility.

234. M. PUDICA, (*Linn.*) Sensitive plant. Total vadie, *Tam.*

Remarks.—This plant is a native of Brazil, and is commonly grown in gardens under the name of Sensitive Plant, the compound leaves closing on the slightest touch. The roots of this plant and its allies emit a most offensive smell, resembling the odour of a sewer at the time of impending rain. Flowers pale pink.—*Bal. Cyclop. of Ind.*; *Hort. Cal. p.* 257.

INGA, (*Plumier.*) The South American name of *Inga vera*, adopted by Marcgraff.

235. I. DULCIS, (*Willd.*) Sweet fruited Inga. Coorkapooli marum, *Tam.*

Remarks.—This is a large and handsome tree, with drooping branches armed with short, straight thorns. Flowers small, yellowish green, pods filled with a sweet, firm, nourishing pulp. Timber of good quality. This is one of the best hedge plants in Southern India. Native of the Philippine Islands. Cultivated in India.—*W. and A. Prod. p.* 268; *Wight's. Icon. fig.* 198; *Hort. Cal. p.* 257; *Roxb. fl. Ind* II, *p.* 556.

DESMANTHUS, (*Willd.*) So named from *desme* and *anthos*, a flower; the flowers are collected into bundles, or spikes.

236. D. NATANS, (*Willd.*) Floating Desmanthus. Sonday keeray, *Tam.* This plant which is sensitive is generally found floating in tanks. Flowers yellow, the leaflets and pods are eaten by the natives.—*W. and A. Prod. p.* 270 ; *Hort. Cal. p.* 258 ; *Bal. Cyclop. of Ind.*

ADENANTHERA, (*Linn.*) The name is derived from *aden*, a gland, and *anthera*, an anther, in allusion to a gland on each anther.

237. A. PAVONINA, (*Linn.*) Red-wood tree.

Remarks.—This is a large and handsome tree, with small whitish flowers, in axillary and terminal racemes. The seeds are of a bright scarlet colour, and are worn by women as beads ; they are also used as weights. The wood is hard and durable, red, yielding a dye and adapted to cabinet making. Native of the Moluccas, both Peninsulas of India, Bengal, &c.—*W. and A. Prod. p.* 271 ; *Roxb. fl. Ind.* II. *p.* 370 ; *Wight's Illustr. fig.* 80 ; *Gra. Cat. B. pl. p.* 57 ; *Hort. Cal. p.* 259 ; *Bal. Cyclop. of Ind.*

ACACIA, (*Necker.*) From *ac*, a point, or *akazo*, to sharpen ; many of the species having thorns or prickles.

238. A. CATECHU, (*Willd.*) Catechu tree. Wodalay or Wothalay, *Tam.*

Remarks.—A small armed tree, flowers white, in long axillary spikes. Catechu is extracted from the pods and old high coloured wood of this tree. Native of most parts of India.—*W. and A. Prod. p.* 272 ; *Gra. Cat. B. pl. p.* 58 ; *Hort. Cal. p.* 259 ; *Bal. Cyclop. of Ind.*

239. A. ARABICA, (*Willd.*) Babool tree. Karoo velum, *Tam.* Nullatooma, *Tel.* Babula, *Beng.* and *Hind.*

Remarks.—This tree is found in every district of India, and is worthy of cultivation on account of its gum, timber, and its seeds, the latter being a favourite food of sheep, &c. It is of rapid growth, and requires no water, flourishing in dry arid plains, and especially in black cotton soil, where other trees are rarely met with. Like several others of this genus, it yields abundance of transparent gum, which is used in India as a substitute for the real gum Arabic, the latter being the produce of *A. vera.* The gum is procured by making incisions in the bark, and the sap running out hardens into lumps of different sizes and figures. The bark is used medicinally, and is also extensively used for tanning leather. It has a very hard, tough wood, which is extensively used, but can seldom be obtained of large size, and is generally very crooked. It is used for ploughshares, naves of wheels, knees and ribs of country ships, &c., and generally for all purposes, for which a hard bent wood is required. It makes excellent tent pegs. Flowers bright yellow.—*W. and A. Prod. p.* 277 ; *Gra. Cat. B. pl. p.* 59 ; *Hort. Cal. p.* 262 ; *Bal. Cyclop. of Ind.* ; *Mimosa Arabica*, *Roxb. fl. Ind.* II. *p.* 557.

240. A. LEUCOPHLÆA, (*Willd.*) Panicled Acacia. Velvay-lum, *Tam.* Tella-tooma, *Tel.*

Remarks.—A small tree; produces a good dark coloured wood. Bark astringent. The natives distil an ardent spirit from it, mixed with palm wine and a little coarse sugar. On this account the trees are sometimes farmed from Government, (*Roxb.*) Flowers small, pale yellowish. Native of Coromandel.—*W. and A. Prod. p.* 277 ; *Hort. Cal. p.* 262 ; *Bal. Cyclop. of Ind.* ; *Mimosa Leucophlœa ; Roxb. fl. Ind.* II. *p.* 558.

241. A. RUGATA, (*Buch.*) Soap acacia. Reeta, *Beng.*

Remarks.—This is a scandent shrub, with small white flowers. The thick succulent legumes are sold in the bazar, and used as soap for washing the hair, &c. They are also employed by the Hindoos for marking the forehead.—*Hort. Cal. p.* 263.

DICHROSTACHYS CINEREA, (*W. and A.*) An armed shrub with flowers in cylindric spikes, one half of which are yellow, the other white.—*Hort. Cal. p.* 259 ; *W. and A. Prod. p.* 271 ; *Wight's Icon. fig.* 357 ; Mimosa cinerea, *L* ; *Roxb. fl. Ind.* II. *p.* 561.

PARKIA, (*Brown.*) So named in memory of the celebrated African traveller Mungo Park.

242. P. BIGLANDULOSA, (*W. and A.*) Biglandular Parkia.

Remarks.—This large and elegant tree was introduced into India from Africa ; the flower buds resemble balls of velvet. The legumes are filled with farinaceous pulp, the wood is hard and promising, surrounded by an astringent bark. The sweet and farinaceous pulp within the pods is highly esteemed and made into sweetmeats. The natives also make a pleasant drink by diffusing the farina through water. This tree has now been introduced, for many years, into some of the gardens about Madras ; the farina is a new article of food in this Presidency and deserves attention. (*M. E. J. R.*)—*W. and A. Prod. p.* 279 ; *Gra. Cat. B. pl. p.* 57 ; *Hort. Cal. p.* 257 ; *Bal. Cyclop. of Ind.* ; Mimosa pedunculata ; *Roxb. fl. Ind.* II. *p.* 551.

ORDER XXXVIII. MORINGACEÆ, LINDL.

HORSE RADISH TREE TRIBE.

Description.—This order is considered allied to Leguminosæ, the plants differing chiefly in their petaloid sepals, stamens arising from a perigynous disk, a pod-like capsular fruit with three valves, three parietal placentas, and loculicidal dehiscence, with the seeds buried in the substance of the valves. Trees with pinnate or tripinnate leaves, found in the East Indies and in Arabia. The properties of the order are usually

stimulant and pungent. Known species four.—*Balfour's Outlines of Botany*, p. 428.

MORINGA, (*Burm.*) Moringa is the Malabar name.

243. M. PTERYGOSPERMA, (*Gært.*) Horse-Radish tree. Mooroonga marum, *Tam*.

Remarks.—This is a very useful tree; the leaves and flowers are much eaten by the natives, and make an excellent vegetable. The pods are freely eaten by Europeans as asparagus, either boiled separately or in curries—the bark of the roots as horse-radish—the natives have recourse to it in adulterating the country mustard. Cultivated everywhere, in gardens and about villages. The large branches planted in the ground root freely and soon become small trees, giving a continued supply of wholesome vegetables. Produce from seedling plants is the best, (*Jaffrey.*) The seeds when ripe yield a fine clear oil, called the Ben oil, which is used by perfumers and watchmakers.—*Bal. Cyclop. of Ind*; *Wight's Illustr. fig.* 77.

ORDER XXXIX. ROSACEÆ, JUSS.

ROSE TRIBE.

Description.—Trees, shrubs, or herbs, with alternate, usually stipulate leaves, and regular, rarely unisexual, flowers. Caylx 4-5 lobed, sometimes calyculate, fifth lobe posterior. Petals five, rarely wanting. Stamens definite or indefinite. Disk lining the tube of the calyx, or surrounding its orifice. Ovaries solitary or several, one-celled, with one or few anatropal ovules. Styles lateral or terminal. Fruit achenes, drupes, follicles, or pomes. Seeds one or more, exalbuminous, with a straight embryo having flat cotyledons.

Distribution.—This order is generally distributed over the globe, but the species are most abundant in temperate climates, where they supply many important fruits. The known species amount to about 1000.

Properties.—Astringent properties are exhibited by the bark and roots of most of the plants of the order. Prussic acid occurs in the Sub-orders Amygdaleæ and Pomeæ. Many of the plants supply edible fruits.—*Balfour's Outlines of Botany*, p. 428; *Lindl. V. K.* p. 563.

ROSA, (*Linn.*) So named from the Celtic, rhod, red; in reference to the prevailing colour of the flowers.

The rose has been a favorite flower from time immemorial among the civilized nations of Europe and Asia. The shrub varies in size in different species, from one foot to six or eight, and the colours are red, white, yellow, purple, striped; simple or in almost numberless shades and mixtures; the flowers are single, semi-double, and double. The odour is universally grateful. For the following list of roses with the remarks, I am indebted

to Colonel Colbeck. They are all excellent roses, the beauty and fragrance of the flowers well repay the great care bestowed upon them.

244. R. COLLINA.? Red and White Persian Roses.

Remarks.—These roses thrive best in pots—the larger the better. After the rains, *i. e.* about the middle of December or nearer the beginning, roots should be exposed by removing a great part of the mould from the pot, and no water should be given for several days—when the leaves will fall off: upon this the roots should be covered and a rich manure given, and all the longer branches should be put down as layers. In about six weeks a splendid show of flowers will be produced, when the layers have taken good root they should be removed from the parent plant and potted. The manure I have found to answer best is Red Guindy soil, sheep's dung and very old horse manure mixed with common garden soil, adding a small quantity of chunam. This process once a year produces a large show of flowers, and propagates the rose, but plants will usually throw out a few flowers about July without the manuring or layering—these roses I have tried in the open ground but they have proved a failure.

245. R. DEVONIENSIS. Tea-scented Rose.

Remarks.—A beautiful buff and blush rose. Thrives best in the open ground with as little shelter as possible—requires good rich old manure and red soil mixed with common garden soil. I have this rose in the open ground throughout the year and find the hot winds affect it much in the way a winter does at home. I have tried the experiment with two equally healthy plants at the end of the flower season—one I have left in the open ground, the other I have taken up and put into a pot protecting it throughout the hot season; at the end of which it has been returned to the open ground, but I found the plant that had been left uncared for, yielded by far the finer flowers in the season.

246. R. SOUVENIR D'ELIZA. White Tea-scented Rose. Treat in precisely the same way as the Devoniensis.

247. R. FLORENCE. Highly scented Tea Rose. This last was the name received with the rose from Calcutta, but Colonel Colbeck has named it Florence. It is a beautiful rose and may be treated in the same way as Devoniensis.

248. R. SCHOTTICE. A beautiful blood red rose, very double—treat in a similar manner,

249 R. BOURBON. This rose may be rendered very fine by the same treatment as above.

250. R. BLANCHE. White French rose. A pretty, delicate scented rose, thrives best in the open ground, but must be

potted and sheltered during the hot winds: soil the same as the above.

251. R. JAUNE DES PREZ. A climbing cluster rose. Flowers partially yellow, and very sweet scented: may be treated precisely as the Devoniensis.

252. R. PEELIANA. A very full large and double flower —rose coloured: treat as above.

253. R. DE MEAUX. Should be manured the same as Devoniensis, but thrives best in a pot sheltered during hot winds.

254. R. BOOTHIA. A very handsome rose, large and double, rose and salmon colored shaded. Treat in every way as Devoniensis.

255. R. LA MARQUE. Milk white rose with yellow centre: very pretty shaped and of delicious perfume. It is a climber and may be treated as the Devoniensis. Thrives best in the open ground, but is pretty in pots with basket work for support to creep over.

256. R. POMPOSA. Fairy Rose—very hardy and may be kept either in the open ground or pots: manure as Devoniensis.

257. R. PRINCESS CLEMENTINE. A very handsome rose, of delicate blush—treat as Devoniensis.

258. R. MARY. A very hardy, pretty shaped rose—color bright red—any manure seems to suit it.

259. R. EMMA. A similar rose to the above, of deeper shade and different shape—treat as above.

260. R. ——. Ragged Rose. Crimson, very handsome—manure and treat as for Devoniensis.

261. R. SAFFRANO. Copper colored shaded with buff and a tinge of yellow—treat as Devoniensis.

262. R. SOUVENIR DE LA MALMAISON. Flowers large, pale flesh colored. One of the most beautiful of roses. This

rose I have only had one year—it has lived through the hot weather, and flowered freely in the cold, but the flowers had a scorched appearance, that I hope to remove by change of manure.

263. R. GEANT DES BATAILLES. A beautiful rose—flowers brilliant crimson scarlet, habit robust—treat as Devoniensis except that the manure must not be so rich. I use cow, instead of horse dung.

264. R. WAX. Very hardy, and I have had some most beautiful flowers, very double—treat it has Devoniensis.

265. R. ——. Buff rose. Treat as Devoniensis.

266. R. SMITHII. China yellow rose. This rose thrives best in the open ground with plenty of air and trellis work to creep upon. The less sheltered the better, requires rich manure and flowers freely.

267. R. PROVENCE. Cabbage Rose. I have only had a plant of this rose a few months. I have succeeded in getting a few flowers very sweet, but not nearly so large and full shaped as in England. I hope to improve them—have not ventured to place the plant in the ground yet.

268. R.——. Copper colored rose. Treat as Devoniensis.

269. R.——. Blush creeping rose, very pretty, and flowers freely—clusters. Treat as the above.

270. R.——. White Cluster rose, the same as the above.

271. R. EUGENE BEAUHARNAIS. A handsome rose, deep damask shaded—treat as Devoniensis.

272. R. OPHIRIE. A golden colored rose, very hardy.

273. R. LUCULUS. A very deep maroon colored rose. Treat as Devoniensis.

274. R. MRS. STOWE. A pretty rose. Treat as Devoniensis.

275. R. BEAUTE LYONNAIS. Very handsome rose. Cerise colored, shaded. Treat as Devoniensis.

276. DUCHESS OF NORFOLK. Pretty, light crimson colored rose—requires care and less strong manure than the Devoniensis.

277. R. MADAME HELFENBIEN. A very handsome rose. Treat as Devoniensis.

278. R. QUEEN VICTORIA. A full fine shaded and very sweet rose, hardy and free flowering. Treat as Devoniensis.

279. R. PRINCESS ROYAL. The same color and perfume as the above, equally hardy but smaller in size. Treat as Devoniensis.

Colonel Colbeck thus concludes : I have many other rose plants—some have not flowered yet—others appear as though they would not flower, though they are perfectly healthy. From December last year, up to the present time (October,) I have had roses more or less abundant from almost all the plants I have named above. When I put a plant into the ground I make the gardeners dig a hole about four feet deep and three feet in diameter, and in filling it in the soil is attended to. This plan with good water and proper manure will not fail to produce fine flowers."

280. R. DAMASCENA, (*Mill.*) Damascus rose. Flower large, fragrant, rose. The petals yield a highly fragrant essential oil, called otto of roses.—*Hort. Cal. p.* 194.

281. R. RUBIGINOSA, (*Linn.*) Sweet Briar ; Eglantine. A delicate plant in Peninsular India.

"———With fairest flowers,
Whilst summer lasts, and I live here, Fidele,
I'll sweeten thy sad grave ; thou shalt not lack
The flower that's like thy face, pale primrose ; nor
The azured barebell like thy veins ; no, nor
The leaf of *Eglantine* ; whom not to slander,
Out sweetened not thy breath."
Shakespeare, in Cymbeline.

282. R. INDICA, (*Linn.*) Blush China Rose. Flowers largish, rose, half double.

283. R. MULTIFLORA, (*Thunb.*) Many flowered rose. Flowers double, smallish, rose.

284. R. MOSCHATA, (*Mill.*) White flowered rose.

285. R. EDWARDSII, Rose of Edward, or Madras Rose.

Remarks.—This Rose is very common about Madras, scarcely a garden being without it. It blossoms freely all the year round, producing large bunches at the extremities of its shoots of the year; but, if handsome, well shaped flowers are desired, these must be thinned out on their first appearance to one or two, or at the most three on each stalk. It is a pretty flower, but has little fragrance.

286. R. INVOLUCRATA. (*Roxb.*) Indian dog-rose. Flowers large, white, fragrant.

Sub-order POMEÆ. The Apple tribe.

CRATÆGUS. (*Linn.*) So named from *kratos*, strength; in allusion to the strength and hardness of the wood.

287. C. CRENULATA, (*Roxb.*) Indian Pyracantha. A shrubby plant with largish, white flowers. Native of Nepaul, and Kemaon.—*Roxb. fl. Ind.* II. *p.* 509; *Hort. Cal. p.* 195.

ERIOBOTRYA. (*Lindl.*) From *erion*, wool, and *botrys*, a bunch of grapes; the racemes are very woolly.

288. E. JAPONICA, (*Lindl.*) Loquat tree.

Remarks.—A Chinese fruit tree; leaves broad lanceolate, wrinkled, serrate, woolly beneath; flowers interminal, compound woolly recemes; they have the smell of hawthorn blossoms. The fruit is of a yellow colour, with thin skin and sweet acid pulp. It is much esteemed both for desert and preserves. There are two very fine young trees growing in the Government Gardens, Guindy.—*Gra. Cat. B. pl. p.* 65. *W. and A. Prod. p.* 302; *Wight's Icon. fig.* 226; *Hort. Cal. p.* 198; Mespilus japonica, *Thunb. Roxb. fl. Ind.* II. *p.* 510.

ORDER XL. LYTHRACEÆ. LINDL.

LOOSESTRIFE TRIBE.

Description.—Herbs, rarely shrubs, often with quadrangular branches, with usually opposite, and entire exstipulate leaves. Among the allied exalbuminous perigynous orders it is distinguished by its tubular calyx

inclosing a 2-6-celled ovary which is free from it, its united styles, membranous capsular fruit, and stamens inserted on the calycine tube below the petals.

Distribution.—The plants are chiefly tropical; some are found in Europe and in North America.

Properties.—Astringency is met with in many plants of the order. Some of them, as *Lawsonia*, furnish dyes.—*Balfour's Outlines of Botany* *p.* 430; *Lindl. V. K. p.* 574.

LAWSONIA, (*Linn.*) So named in honour of Isaac Lawson, M. D., author of a voyage to Carolina.

289. L. ALBA. Henna plant. Maroodanie, *Tam.* Mendi, *Beng.* Gaumta Chettoo, *Tel.*

Remarks.—This is the *Henna-plant* of Egypt. The fresh leaves, beaten up with catechu, dye the nails and skin of a reddish orange color, which is much admired by the women of India and Egypt. The fresh made paste is laid on at bed-time, and removed in the morning, when the color remains till the nails or epidermis are renewed or removed (*Roxb.*) The leaves are also used for dyeing skins and maroquins reddish yellow, and for many other purposes. They contain no tannin. This is a good hedge plant resembling the English privet, the wood strong and suited for tool handles, tent pegs, &c. The flowers are remarkably fragrant whether fresh or dry, and are particularly grateful at a distance. Native of the Moluccas, Peninsula of India, Bengal, Hindoostan, &c. Exists in a cultivated state in N. Africa and most oriental countries.—*W. and A. Prod. p.* 307; *Hort. Cal. p.* 131; *Gra. Cat. B. pl. p.* 67; *Bal. Cyclop. of Ind.*; Lawsonia inermis, *L.*; *Roxb. fl. Ind.* II., *p.* 258.

NESÆA, (*Com.*) So named from *nesæa,* a sea nymph.

290. N. MYRTIFOLIA. (*Lindl.*) Myrtle-leaved Nesæa. A small shrub, native of Brazil. Flowers smallish, yellow.—*Hort. Cal. p.* 130.

LAGERSTRŒMIA, (*Linn.*) In honour of Magnus Lagerstrœm, of Gottenburgh.

291. L. INDICA, (*Linn.*) Indian Lagerstrœmia.

Remarks.—This is a pretty shrubby plant, grows to the height of seven or eight feet. Flowers of a beautiful lilac colour, in terminal panicles. Native of China.—*W. and A. Prod. p.* 308; *Wight's Illustr. fig.* 88. *Roxb. fl. Ind.* II. *p.* 505; *Gra. Cat. B. pl. p.* 67; *Hort. Cal.* 131..

292. L. INDICA, *b.* ALBA. White flowered Indian Lagerstrœmia. A variety of the above species. There are several other varieties all very beautiful.

293. L. REGINÆ. (*Roxb.*) Oblong-leaved Lagerstrœmia.

Remarks.—A small timber tree, with opposite oblong leaves; flowers in May, in large terminal panicles, of a dark blue or purple colour; exceedingly showy. A tree in full blossom looks in the morning as if mantled with roses, but the flowers change through the day to a beautiful purple, making it appear at evening, if seen from a short distance, like a bower of English lilacs. This is an abundant timber tree in the Tenasserim Provinces; the wood though soft, is durable under water, and is considered a valuable timber in ship building. Native of the East Indies and China.—*Roxb. fl. Ind.* II., *p.* 505; *W. and A. Prod. p.* 308; *Wight's Icon. fig.* 413; *Hort. Cal. p.* 131; *Gra. Cat. B. pl. p.* 67; *Bal. Cyclop. of Ind.*

294. LAFŒNSIA VANDELLEANA. Vandell's Lafœnsia. A small shrub, introduced from the Calcutta Botanic Gardens. Flowers large, white.

ORDER XLI. COMBRETACEÆ. R. BROWN.

MYROBALAN TRIBE.

Description.—Trees or shrubs, with alternate or opposite, entire, exstipulate leaves; often apetalous. They are distinguished from the orders near them by their one-celled ovary, containing 2-4 suspended ovules, but only one seed in the fruit and convolute cotyledons.

Distribution.—All natives of the Tropics of Asia, Africa, and America.

Properties.—Under the species. *Balfour's Outlines of Botany, p.* 431; *Lindl. V. K. p.* 717.

TERMINALIA, (*Linn.*) The leaves are in bunches at the end of the branches; hence the name from terminus, end.

295. T. ANGUSTIFOLIA, (*Facq.*) Narrow-leaved Terminalia.

Remarks.—A small tree, branches in whorls: leaves linear lanceolate with purple veins. A milky juice flows out from this tree, which being fragrant on drying and resembling *Benzoin*, is used in churches at the Mauritius as a kind of incense. (*Royle*). Fruit used like that of Terminalia Chebula; flowers small, green, odoriferous.—Peninsula of India.—*W. and A. Prod. p.* 312; *Gra. Cat. B. pl.* 69; *Hort. Cal. p.* 36.

296. T. CATAPPA, (*Linn.*) Country Almond tree. Nattoovadum marum, *Tam.* Vadum-vittello. *Tel.* Badamie, also Junglie Badam, *Hind.* Badam, *Beng.*

Remarks.—This is a large, handsome, and valuable timber tree. Drupe three inches long, egg-shaped, grooved; kernel resembles the almond or filbert in taste and composition; yields an excellent fixed oil, and is good nourishing food. The bark and leaves are very astringent, and yield a black paint. Flowers small, purplish-green. Native of the Moluccas, both Peninsulas of India, Bengal.—*W. and A. Prod. p.* 313; *Wight's Icon. Fig.* 172; *Roxb. fl. Ind.* II. *p.* 430; *Gra. Cat. B. pl. p.* 69; *Hort. Cal. p.* 36; *Bal. Cyclop. of Ind.*

297. T. BELERICA, (*Roxb.*) Beleric Myrobalan tree. Tonda marum, also Tanikai or Tandee marum, *Tam.* Tadi chettoo, *Tel.* Buhura, *Beng.*

Remarks.—This is a very large tree; leaves deciduous about the beginning of the hot season, when the flowers appear. Wood white, softish, durable. Bark when wounded, gives out a large quantity of an insipid gum, resembling *Gum Arabic.* Fruit astringent, tonic. Kernels, tasting like filberts, eaten by the natives, and held intoxicating, when eaten in abundance, *Roxb.* Flowers small, greyish-green, smelling offensively. Native of the Peninsula of India, Goalparrah, &c.—*W. and A. Prod. p.* 313; *Wight's Illustr. Fig.* 91; *Roxb. fl. Ind.* II., *p.* 431; *Hort. Cal. p.* 36; *Gra. Cat. B. pl.* 69; *Bal. Cyclop. of Ind.*

298. T. BERRYI, (*W. and A.*) Dr. Berry's Terminalia.

Remarks.—This tree grows to a large size, the wood is white, described as of ordinary quality, used on the coast for canoes, and for making the broad wooden platters in use among fishermen and ship lascars. Native of the Peninsula of India, Balaghaut mountains, &c.—*W. and A. Prod. p.* 314; *Hort. Cal. p.* 37; *Bal. Cyclop. of Ind.*; Pentaptera angustifolia, *Roxb. fl. Ind.* II. *p.* 437.

299. T. TOMENTOSA, (*W. and A.*) Tomentose Terminalia. Marathy marum, *Tam.* Ashan, Piysahal, *Beng.*

Remarks.—This tree grows to a considerable size; has erect rigid branches and leathery leaves, entire or slightly crenulate; fruit smooth, 5 winged. Timber very valuable, much used for making shafts of gigs, and other work where toughness of fibre is required. Bark astringent and dyeing black. Flowers small, greenish white. Common on the ghauts and in the Concans.—*W. and A. Prod. p.* 314; *Wight's Icon. fig.* 195; *Hort. Cal. p.* 38; Pentaptera tomentosa, *Roxb. fl. Ind.* II. *p.* 440; *Gra. Cat. B. pl. p.* 69; *Bal. Cyclop. of Ind.*

300. T. PANICULATA, (*W. and A.*) Panicled Terminalia.

Remarks.—A very handsome tree, with oblong, coriaceous leaves. Flowers greenish white, in terminal spikes, forming a compound panicle; fruit small compared with that of the other species, 3 winged; one wing larger than the others. Native of Courtallum, Malabar, &c.,—*W. and A. Prod. p.* 315; *Hort. Cal. p.* 38; Pentaptera paniculata, *Roxb. fl. Ind.* II. *p.* 442; *Gra. Cat. B. pl. p.* 70.

QUISQUALIS, (*Linn.*) From *quis*, who, and *qualis*, what kind; when the genus was named, it was uncertain to what class or order it belonged.

301. Q. INDICA, (*Linn.*) Rangoon Creeper, or Chinese Honey suckle.

Remarks.—A scandent shrub, with very beautiful, sweet scented flowers of various colours, from white to orange and deep red. They grow in terminal and axillary spikes. The flowers are most fragrant towards night. The dried fruit are reckoned vermifuge.—*W. and A. Prod. p.* 318; *Wight's Illustr. fig.* 92; *Roxb. fl. Ind.* II. *p.* 427; *Gra. Cat. B. pl. p.* 70; *Hort. Cal. p.* 39; *Bal. Cyclop. of Ind.*

POIVREA, (*Commerson.*) Named in compliment to N. Poivre, Intendant of the Mauritius, in 1766.

302. P. COCCINEA, (*D. C.*) Scarlet Poivrea. A very elegant climbing shrub, well adapted for covering trellis work. Flowers scarlet, very handsome. Native of Madagascar. Combretum coccineum, *Lam.*; C. purpureum, *Vahl.*; *Roxb. fl. Ind.* II. *p.* 233; *Hort. Cal. p.* 39.

303. COMBRETUM, (*Lœffling*) A name given to a climbing plant by Pliny.

304. C. GRANDIFLORUM, (*G. Don.*) Large flowering Combretum. Flowers very elegant, large, scarlet. Native of Sierra Leone.

305. C. DENSIFLORUM.

306. C. COMOSUM, (*Hort.*) Comose Combretum. A handsome climbing plant, with bright scarlet flowers, in terminal racemes. Native of S. Leone.

ORDER XLII. ALANGIACEÆ. LINDL.

ALANGIUM TRIBE.

Description.—Trees or shrubs, with branches often spiny, leaves entire, alternate, exstipulate, and without dots. Calyx adherent, 5-10 toothed. Petals 5-10, linear, reflexed. Stamens equal in number to the petals. or two or four times as many; filaments villous at the base; anthers adnate, linear. Fruit a drupe adherent to the calyx. Seed anatropal, pendulous, albuminous; cotyledons flat.

Distribution.—Natives of India and North America.

Properties.—Unimportant.

ALANGIUM, (*Juss.*) . So styled from its Malabar name.

307. A. DECAPETALUM, (*Lam.*) Sage-leaved Alangium. Alingie marum, *Tam.* Akola, *Hind.* Bagh-ankra, *Beng.*

Remarks.—A small tree with whitish flowers; the petals vary on the same tree from six or eight to ten. The fruit is astringent; but eaten by the Natives. The wood is strong, and is said by Roxburgh to be "beautiful"—the roots are aromatic. Found throughout India.—*W. and A. Prod. p.* 325; *Wight's Icon. fig.* 94; *Gra. Cat. B. pl. p.* 72; *Hort. Cal. p.* 40; *Bal. Cyclop. of India*; Alangium hexapetalum, *Roxb. fl. Ind.* II. *p.* 502.

ORDER XLIII. MYRTACEÆ. R. BROWN.

MYRTLE TRIBE.

Description.—Trees or shrubs, with entire, exstipulate, usually opposite and dotted leaves, often having an intramarginal vein. Calyx adherent, cleft, sometimes operculate. Petals 4-5, sometimes none. Stamens usually indefinite with long filaments and ovate anthers. Style simple. Fruit baccate in true Myrteæ and capsular in Leptospermeæ. Seed usually numerous, exalbuminous.

Distribution.—Natives of hot countries both within and without the tropics; great numbers are found in South America and the East Indies, not many in Africa, and a considerable proportion of the order in New Holland and the South Sea Islands; but the genera of those countries are mostly peculiar to them.

Properties.—The plants of this order are generally aromatic, and yield a pungent volatile oil. Some of them are astringent, others yield gummy and saccharine matter. The unexpanded flower-buds of *Caryophyllus aromaticus* constitute the Clove of commerce. *Pimenta vulgaris* bears an aromatic fruit, which, when dried, constitutes Pimento or Jamaica pepper. The leaves of *Melaleuca Cajuputi* furnish the green pungent oil of Cajuput.—*Balfour's Outlines of Botany, p.* 432; *Lindl. V. K. p.* 734.

MELALEUCA, (*Linn.*) So named from *melas*, black, and *leukos*, white; because the trunk is black and the branches white.

308. M. CAJEPUTI, (*Roxb.*) Cajuput tree. Kyapoothie marum, *Tam.*

Remarks.—This is a small tree, flowers small, white. The well known oil of cajuput, is distilled from the leaves of this plant. Native of the Moluccas, &c.—*W. and A. Prod. p.* 326; *Roxb. fl. Ind.* III. *p.* 394; *Hort. Cal. p.* 45; *Bal. Cyclop. of Ind.*

PUNICA, (*Linn.*) So named from *punicus*, of Carthage, near which city it is said to have been first found; or from *punicens*, scarlet; alluding to the colour of the flowers.

309. P. GRANATUM, (*Linn.*) Common Pomegranate tree. Madalum marum, *Tam.* Dadima-pundoo, *Tel.* Dalim, Anar, *Beng. Hind.*

Remarks.—The Pomegranate tree is commonly cultivated in gardens, more as an ornamental plant than for the sake of its fruit. The rind of the fruit and the flowers are the parts used medicinally; they are both powerfully astringent. The juice is sub-acid, quenching thirst, and gently laxative. The bark of the root is a remedy for tape-worm given in decoc-

tions. It sickens the stomach, but seldom fails to destroy the worm. Flowers large, scarlet. Cultivated in India.—*W. and A. Prod. p.* 327; *Roxb. fl. Ind.* II. *p.* 499; *Gra. Cat. B. pl. p.* 72; *Bal. Cyclop. of Ind.*; *Wight's Illustr. fig.* 97.

310. P. *β. flore pleno.* Double-flowered Pomegranate tree. This is a very ornamental shrub or small tree. It makes an excellent hedge plant, and has a very pretty appearance when in flower.

PSIDIUM, (*Linn.*) Derived from *psidion*, the Greek name of the Pomegranate.

311. P. POMIFERUM, (*Linn.*) Apple-shaped or Red Guava tree. Lal-sufriam, also Lal Jham, *Hind.* Lal-peyra, *Beng.* Chengoyah pazham, *Tam.*

Remarks.—This is a larger tree than the white guava. Many people think the fruit inferior to the latter. The fruit is somewhat astringent; this is probably improved by proper cultivation. The root and young leaves are astringent and are esteemed useful in strengthening the stomach. Flower largish, white, sweet scented. Native of the West Indies, Mexico. Domesticated in India.—*W. and A. Prod. p.* 328; *Roxb. fl. Ind.* II. *p.* 480; *Gra. Cat. B. pl. p.* 72; *Hort. Cal. p.* 46; *Useful plants of India.*

312. P. PYRIFERUM, (*Linn.*) *Pear-shaped or white Guava tree.* Soopæriam, also Sufaid Jham, *Hind.* Peyra, *Beng.* Vellei goyah pazham, *Tam.*

Remarks.—In all Southern Asia the common guava is found every where in gardens, which probably found its way to India from South America through the Portuguese; wood small, but very hard. The fruit is well known Flowers largish, white, sweetish scented Native of the West Indies and tropical S. America. Domesticated in India.—*W. and A. Prod. p* 328; *Roxb. fl. Ind.* II. *p.* 480; *Gra. Cat. B. pl. p.* 72; *Hort. Cal. p.* 46; *Bal. Cyclop. of Ind.*

313. P. CATTLEYANUM, (*Sabine*,) Chinese or Purple Guava tree.

Remarks.—This is considered one of the best of the guavas; the fruit is of a fine deep claret colour, and the pulp in consistence and flavour bears a considerable resemblance to the strawberry. Flowers largish, white. Native of South America.

MYRTUS, (*Linn.*) So named from *myron*, perfume; Myrtos of the Greeks, Myrtus of the Dutch, and of almost every other European language.

314. M. COMMUNIS, (*Linn.*) Common Myrtle,

Remarks.—The common myrtle is a well known popular shrub. It was a great favorite among the ancients, for its elegance, and its evergreen, fragrant leaves. It was sacred to Venus, either on this account, or perhaps because it flourishes most in the neighbourhood of the sea. Myrtle wreaths adorned the brows of bloodless victors, and were the symbol of authority for magistrates at Athens. Both branches and berries were put into wine, and the latter were used in the cookery of the ancients. The myrtle was also one of their medicinal plants. All parts of it are astringent, but it is discarded from modern practice. In Egypt it is used as a hedge plant. Flowers small, white, fragrant. Native of the South of Europe.—*Loud. Encyclop. of Plants, p.* 416 ; *Roxb. fl. Ind.* II. *p.* 297 ; *Hort. Cal. p.* 46.

SYZYGIUM, (*Gœrtner.*) So named from *syzygos*, coupled ; in allusion to the manner in which the branches and leaves are united in pairs.

315. S. JAMBOLANUM, (*D. C.*) Jamoon tree. Nawel marum, *Tam.* Neradi, *Tel.* Jamoon, *Hind.* Kalo-jam, *Beng.*

Remarks.—A fine large tree of common occurrence ; suitable for avenues ; the fruit small, and somewhat astringent, sold in the bazars. The wood is much used for ordinary purposes, but is of little value. The bark dyes excellent durable browns of various shades according to the mordant employed, or the strength of the decoction. Flowers small, white. Native of the Moluccas, Peninsula of India, Bengal, &c.—*W. and A. Prod. p.* 329 ; *Gra. Cat B. pl. p.* 73 ; *Bal. Cyclop. of Ind.* ; Eugenia Jambolana, *Lam.* ; *Roxb. fl. Ind.* II., *p.* 484 ; *Wight's Icon. fig.* 535 ; *Hort. Cal. p.* 49.

PIMENTA, (*Lindl.*) *Pimento* is the Spanish name for Indian pepper.

316. P. VULGARIS, (*Lindl.*) All-spice or Jamaica pepper.

Remarks.—This is a handsome tree, common in the hilly parts of the north side of Jamaica. The flowers are without shew, and are succeeded by spherical purple berries crowned with a persistent calyx : they are called Jamaica pepper or All-spice from their taste being thought to resemble all other spices. The berries are gathered before being ripe, and are carefully dried on mats or terraced floors in the shade. In ten or twelve days they become wrinkled, dry, and of a dark brown colour, and are then packed in bags or casks for sale. The berries have an agreeable, aromatic, sub-astringent taste, resembling that of a mixture of cinnamon, cloves, and nutmegs, with the warm pungent taste of the cloves ; qualities which reside chiefly in the cortical part of the dried berry, and are better extracted by a watery infusion, than by spirit or distillation. They are much used in the kitchen, and also by the druggist to cover the disagreeable taste of other remedies, or to give them warmth. An oil is obtained by distillation which is said to be nearly equal to that of oil of cloves, and sometimes substituted for it.—*Loud. Encyclop. of Plants, p.* 418.

JAMBOSA, (*Rumphius.*) Altered from *Schambu*, the Malay name of one of the species.

317. J. VULGARIS, (*D. C.*) Rose-apple tree. Jumboo-nawel marum, *Tam.* Jemboo-neridie, *Tel.* Goolab-jam, *Beng.*

Remarks.—This tree bears a light, whitish yellow fruit, pear-shaped, with a smooth skin— having a rose flavor ; the odour also is pleasant and rose-like. Flowers large, greenish-white. Cultivated in gardens.—*W. and A. Prod. p.* 332 ; *Gra. Cat. B. pl. p.* 74 ; Eugenia jambos, *Linn.* ; *Roxb. fl. Ind.* II. *p.* 494 ; *Wight's Icon. fig.* 435; *Hort. Cat. p.* 47 ; *Bal. Cyclop. of Ind.*

ORDER XLVI. BARRINGTONIACEÆ. LINDL.

BARRINGTONIA TRIBE.

Description.—Trees or shrubs referred by most authors to the Myrtle alliance, but distinguished by the presence of a large quantity of albumen ; alternate, dotless, and often serrated leaves. The fruit pulpy. Natives of the tropics. The bark of some of the plants is bitter and tonic. Known species 28.—*Balfour's Outlines of Botany, p.* 433.

BARRINGTONIA, (*Forster.*) Dedicated to the Hon'ble Daines Barrington, F. R. S. &c.

318. B. SPECIOSA, (*Linn.*) Splendid Barringtonia.

Remarks.—This large and beautiful tree is a native of Pegu, the Tenasserim Provinces, the Malay Archipelago, and the South Sea Islands. It is very plentiful in Pegu. Its wood is red, hard, of a fine grain, and equivalent to mahogany. It is used in the construction of carts. The fruit is mentioned by Ainslie as being used in Java for intoxicating fish. Flowers large, deep rose-coloured.—*W. and A. Prod. p.* 333 ; *Wight's Icon. fig.* 547 ; *Roxb. fl. Ind.* II. *p.* 636 ; *Hort. Cal. p.* 51 ; *Bal. Cyclop. of Ind.*

CAREYA, (*Roxb.*) So named in honor of the Rev. Dr. Carey.

319. C. ABBOREA. (*Raxb.*) Carey's tree, Pailæ marum, *Tam.* Budadanedi, *Tel.* Kumba or Koomba, *Hind.*

Remarks.—A large tree, leaves deciduous in the cold weather. Flowers large, greenish-white ; fruit ovate, about the sixe of an apple, has a peculiar and rather unpleasant smell. The bark of the tree is made into a coarse kind of cordage, and is used by matchlock men as a slow match for their guns. Wood red, equivalent to mahogany. This is one of the most numerous trees throughout the Tenasserim Provinces. Both Peninsulas of India, extending as far north as the Jumna, along the foot of the Himalayas.—*Roxb. fl. Ind.* II. *p.* 638 ; *W. and A. Prod. p.* 334 ; *Wight's Illustr. fig.* 99 ; *Gra. Cat. B. pl. p.* 74 ; *Hort. Cal. p.* 52 ; *Bal. Cyclop. of Ind.*

ORDER XLV. CUCURBITACEÆ. JUSS.

GOURD TRIBE.

Description.—Succulent, climbing plants, with extra-axillary tendrils (in place of stipules), alternate, palmately-veined, scabrous leaves, and

unisexual flowers. Calyx adherent, limb 5-toothed or obsolete. Petals 4-5, usually united, reticulated. Stamens generally 5, distinct or combined ; anthers long and sinuous. Ovary 1-celled, inferior, with 3 parietal placentas ; stigmas thick, dilated or fringed. Fruit a pepo. Seeds flat, exalbuminous ; cotyledons leafy.

Distribution.—Natives of hot countries in both hemispheres, chiefly within the tropics : a few are found to the North in Europe and North America, and several are natives of the Cape of Good Hope. India appears to be their favorite station ; a good many occur in Brazil, but are little known ; one is found in Norfolk Island, and they are met with in Australia. Known species about 300.

Properties.—The plants of the order may be said in general to possess a certain degree of acridity, which is sometimes so marked as to give rise to drastic purgative qualities. In many cases, however, as in the Melon, the Cucumber, the vegetable marrow, Gourd, Pumpkin, and Sqash, the fruit is edible when cultivated, the seeds are usually harmless.—*Balfour's Outlines of Botany, p.* 434 ; *Lindl. V. K. p.* 311.

LAGENARIA, (*Seringe.*) So named from *lagena*, a bottle ; because of the bottle-shaped fruit of some of the species.

320. L. VULGARIS, (*Ser.*) Bottle Gourd. Shora-kai, *Tam.* Anapa-kai, *Tel.* Kodoo. Laoo, *Beng.*

Remarks.—This plant is commonly cultivated by the natives. The fruit is well known as the bottle gourd. The poorer classes eat it, boiled with vinegar, or fill the shells with rice and meat, thus making a kind of pudding. The pulp of the fruit is often used in poultices ; it is bitter, and slightly purgative, and may be used instead of Colocynth. A decoction of the leaves mixed with sugar is used in jaundice, the hard shell when dry is used for Faqueer's bottles, and a variety of it is employed in making the stringed instrument known as the *Sitar* : as well as buoys for swimming across rivers, transporting baggage, &c Flowers large, white, cultivated.—*W. and A. Prod p.* 341 ; *Gra. Cat. B. pl. p.* 76 ; *Useful plants of India, p.* 283 ; *Hort. Cal. p.* 57 ; Cucurbita Lagenaria, *Linn.* ; *Roxb. fl. Ind.* III. *p.* 718.

CUCUMIS, (*Linn.*) Derived from *curvus*, crooked ; referring to the shape of the fruit.

321. C. MELO, (*Linn.*) Sweet Melon. Molam, *Tam.* Khurbooja, *Hind.* Khur-buj, *Beng.*

Remarks.—The native country of the melon is not clearly ascertained. It is cultivated in all the countries of the East. It seems to have been a favourite food with the Israelites in Egypt, as they put Moses in mind of it in the desert.

"We remember the fish which we did eat in Egypt ; the Cucumbers, and the *Melons.*" (Numbers XI, 5.) The fruit is too well known to need description—there are many varieties of this plant. Flowers largish, yellow.—*W. and A. Prod. p.* 314 ; *Roxb. fl. Ind.* III. *p.* 720 ; *Gra. Cat. B. pl. p.* 77 ; *Hort. Cal. p.* 58 ; *Useful plants, &c. p.* 172.

322. C. SATIVUS, (*Linn.*) Common Cucumber. Vellerikai or Mooloo-velleri, *Tam.* Dosakaia, *Tel.* Keera, *Hind.* Susa, *Beng.*

Remarks.—This plant is cultivated to a great extent by the natives, the fruit is generally eaten green, without any preparation whatever: the country cucumber is very bitter at both ends, these should be cut off before preparing for salad. The green fruit is used as a salad; it is also salted when half grown, and preserved in vinegar. making an excellent pickle. Flowers largish, yellow. Cultivated.—*Jaffrey's Hints.*

323. C. COLOCYNTHIS, (*Linn.*) Colocynth plant. Pey commuttee, Variecoomutie, *Tam.* Putsakaya, *Tel.* Indrawan, *Hind.* Makhal, *Beng.*

Remarks.—The Colocynth plant is properly a native of Turkey, but has long been naturalized in India. The medullary part of the fruit freed from the rinds and seeds is alone made use of in medicine. It is very bitter to the taste. The seeds are perfectly bland and highly nutritious and constitute an important article of food in Africa, especially at the Cape of Good Hope. The extract of colocynth is one of the most powerful and useful of cathartics. An oil is extracted from the seeds, used in lamps. Flowers yellow.—*W. and A. Prod. p.* 342; *Wight's Icon. fig.* 498; *Roxb. fl. Ind.* III. 179; *Gra. Cat. B. pl. p.* 77; Citrullus colocynthis, *Schrad*; *Hort. Cal. p.* 56; *Useful plants, &c., p.* 135.

BRYONIA, (*Linn.*) Named in allusion to the quick growth of the stems, from *bryo*, to sprout.

324. B. SCABRELLA, (*Linn.*) Bristly Bryony. A creeping or climbing plant, leaves toothed, scabrous; fruit size of a pea, smooth, striated. The roots and seeds are medicinal. Flowers yellow. Common.—*W. & A. Prod. p.* 345; *Wight's Icon. fig.* 501; *Gra. Cat. B. pl. p.* 79.

COCCINIA, (*W. and A.*) So named from *coccineus*, scarlet, in allusion to the bright red fruit.

325. C. INDICA, (*W. and A.*) Indian Coccinia. Covay, *Tam.* Kaidonda, *Tel.* Tela Koocha, *Beng.*

A climbing plant, leaves cordate, 5 angled, with a few teeth round the edges; fruit oblong, smooth, about 2 inches long by one in diameter; red when ripe; in an immature state marked with 10 white streaks. The ripe fruit is eaten raw by the natives and also used in their curries. It is the favourite food of many birds. Flowers large, white; common in every hedge.—*W. and A. Prod. p.* 347; *Gra. Cat. B pl. p.* Coccinia grandis, *Hort. Cal. p.* 59; Bryonia grandis, *Linn.*; Momordica monadelpha, *Roxb. fl. Ind.* III. *p.* 708.

MOMORDICA, (*Linn.*) So named from *mordeo*, I bite, the seed having a bitten appearance.

326. M. CHARANTIA, (*Linn.*) Hairy Momordica. Pavakai *Tam.* Kurula, *Beng.*

Remarks.—This vegetable is very commonly cultivated by the natives at the commencement of the rains. The fruit is from ten to fourteen inches long, and from two to four in diameter; the edges are curiously notched and ridged, the flavour is bitter, and it requires to be steeped in salt water before being cooked. The green fruit is used in curries, &c. Flowers middle-sized, pale, yellow. Cultivated every where in the Peninsula.—*W. and A. Prod. p.* 348; *Roxb. fl. Ind.* III. *p.* 707; *Wight's Icon. fig.* 504; *Gra. Cat. B. pl. p.* 78; *Hort. Cal. p.* 57.

327. M. β. MURICATA, (*W. and A.*) Spiked bitter Cucumber. Sirroo pava kai, *Tam.*

Commonly cultivated, and used in curries, said to be very wholesome; flowers middle-sized, pale yellow; fruit smaller than the above species, but more esteemed.—*Jaffrey's Hints. &c.*

TRICHOSANTHES, (*Linn.*) So named from *thrix*, a hair, and *anthos*, a flower, the corolla being ciliated.

328. T. ANGUINA, (*Linn.*) Snake-gourd. Poodalungai, *Tam.* Pottlakaia, *Tel.* Chichinga, *Beng.*

Generally cultivated. Fruit universally eaten by the Natives. Flowers large, white.—*W. and A. Prod. p.* 350; *Roxb. fl. Ind.* III. 701; *Gra. Cat. B. pl. p.* 78; *Hort. Cal. p.* 57.

329. T. BRACTEATA, (*Voigt.*) Bracteated Snake gourd. Ancoruttei, *Tam.* Buro-makal. *Beng.* Abuva, *Tel.*

Remarks.—A large climbing plant with palmate leaves; fruit globular, smooth, of a bright red colour; size of an orange. It is considered poisonous by the natives. The root is also said to be poisonous. Flowers large, white.—*Hort. Cal. p.* 58; T. palmata, *Roxb. fl. Ind.* III. *p.* 704; *W. and A. Prod. p.* 350; *Gra. Cat. B. pl. p.* 79; *Wight's Illustr. fig.* 104.

CUCURBITA, (*Linn.*) So named from *curvitus*, crookedness.

330. C. MAXIMA, (*Duch.*) Squash-gourd. Pusani-kai, *Tam.* Gumudi, *Tel.* Suphuree-koomra, *Beng.*

Remarks.—A large climbing plant, with very large, bright yellow flowers; fruit roundish, size of a pumplemose; generally cultivated, the leaves make excellent greens, and the fruit is used for various culinary purposes; requires good soil and abundance of water.—*W. and A. Prod. p.* 351; *Gra. Cat. B. pl. p.* 79; *Hort. Cal. p.* 59; *Wight's Icon. fig.* 507; C. melopepo, *Roxb. fl. Ind.* III. *p.* 709.

331. C. CITRULLUS, (*Linn.*) Water Melon. Pitcha-kai, also Thurbooshnie pazham *Tam.*

Remarks.—The water-melon is considered to be the melon of the Jews, frequently mentioned in Scripture. In Egypt it is used in medicine, especially in ardent fevers; the people collecting the juce when almost rotten and mixing it with sugar and rose-water. The fruit is of a white fleshy colour within, reddish towards the centre. The juce makes a refreshing drink but has not much taste. Flowers large, yellowish.—*W. and A. Prod. p.* 351; *Gra. Cat. B. pl. p.* 79; *Useful plants, &c. p.* 174.

332. C. OVIFERA, (*Linn.*) Vegetable Marrow. An excellent vegetable of easy culture in good rich soil. One of the most nourishing and wholesome of the Cucumber tribe. Flowers large, yellow.—*Jaffrey's Hints.*

LUFFA, (*Cav.*) Derived from *louff,* the Arabic name of *L. ægyptiaca.*

333. L. ÆGYPTIACA. Egyptian Luffa. Peerkunkai, *Tam.* Beerakai, *Tel.* Tooroi, *Hind.* A large-climbing plant; flowers, largish, yellow. The unripe fruit is eaten by the natives in their curries.—Luffa pentandra, *Roxb. fl. Ind.* III. *p.* 712; Momordica luffa, *Willd.*

ORDER XLVI. PAPAYACEÆ. MART.

PAPAW TRIBE.

Description.—Trees or shrubs often having an acrid milky juice, with alternate, lobed, long-petioled leaves, and unisexual flowers. The plants are distinguished from Cucurbitaceæ by not climbing, and by having a free ovary with 5 placentas and albuminous seed. The natural order Pangiaceæ may be included, which differs only in having polypetalous corolla and scales attached to the female flower.

Distribution.—The species of Carica are natives of South America, and unknown, except as objects of cultivation, beyond that continent; the other genera belong to the temperate parts and tropics of the Old World. Known species about 25.

Properties.—Many of the Papaw worts have an acrid milky juice, while the Pangiads are poisonous.—*Balfour's Outlines of Botany, p.* 436; *Lindl. V. K. p.* 321.

CARICA, (*Linn.*) Erroneously supposed to be a native of Caria.

334. C. PAPAYA, (*Linn.*) Common Papaw tree. Pappaee marum, *Tam.* Bapai-pundoo, *Tel.*

A tree 20-30 feet, without branches (sometimes branching) : leaves alternate, palmate, 7-partite: segments oblong, acute, sinuated, the middle one 3-fid : fruit succulent, oblong, furrowed; calyx small 5-toothed ; corolla tubular in the male and 5-lobed in the female, divided nearly to the base into 5-segments ; male flowers axillary in slightly compound racemes or panicles, while female ones in short simple racemes, sometimes on a different tree : corolla longer than in the male, yellowish.

Remarks.—This remarkable tree was introduced from America, but is now found all over the Peninsula. The leaves are employed by the negroes in the W. Indies to wash their linen instead of soap. Fruit, when unripe, used in curries by the natives, also pickled, and made into a preserve ; when ripe, the soft, yellow pulp, which is very delicious to many, is eaten without the addition of pepper and sugar, as in the W. Indies. It is certainly wholesome, more especially when some of the olive coloured, pungent, caper-like seeds are partaken of at the same time.—*Juice of the pulp* employed in the W. Indies against freckles, *of the unripe fruit* as an efficient vermifuge. "This tree has, moreover, the singular property of rendering the toughest animal substance tender by causing a separation of the muscular fibre; its very vapour even does this ; newly killed meat suspended among the leaves, and even old hogs and old poultry, when fed on the leaves and fruit, become tender in a few hours.—A principal constituent of the juice of the unripe fruit is fibrine, a principle otherwise supposed peculiar to the animal kingdom and to fungi."—*Lindl.; W. and A. Prod. p.* 325 ; *Roxb. fl. Ind.* III. *p.* 824 ; *Gra. Cat. B. pl. p.* 80 ; *Useful plants, &c.; Hort. Cal. p.* 83 ; *Wight's Illustr. fig.* 106.

ORDER XLVII. PASSIFLORACEÆ. LINDL.

PASSION FLOWER TRIBE.

Description.—Herbs or shrubs, usually climbing by tendrils, with alternate, stipulate, sometimes glandular leaves. Calyx of 5 sepals, united below the throat, bearing 5 petals and filamentous or annular processes. Stamens 5, monadelphous, surrounding the gynophore; anthers extrorse. Ovary free from the calyx, 1-celled ; styles 3, club-shaped. Fruit mostly fleshy, stalked, 1-celled, with 3 parietal polyspermous placentas. Seeds albuminous, arrilate.

Distribution.—Passion flowers are the pride of South America and the West Indies, where the woods are filled with their species, which climb about from tree to tree, bearing at one time flowers of the most striking beauty and of so singular an appearance, that the zealous Catholics who discovered them, adapted Christian traditions to those inhabitants of the South American wilderness ; and at other times fruit tempting to the eye and refreshing to the palate. One or two extend northwards into North America. Several are found in Africa, and the neighbouring islands ; and a few in the East Indies. Known species 211.

Properties.—Astringent and narcotic qualities appear to prevail in the order. Many of the species, however, produce edible fruits.—*Balfour's Outlines of Botany, p.* 437 ; *Lindl. V. K. p.* 332.

PASSIFLORA, (*Linn.*) So named from *passio*, passion, and *flos*, a flower; in allusion to the filamentous appendages or rays bearing a resemblance to the emblems of the passion of Christ.

335. P. MINIMA, (*Jacq.*) Small Passion-flower. A small climbing plant, flowers yellowish-green, fragrant. Native of Curacoo.—*Hort. Cal. p.* 80.

336. P. SERRATIFOLIA, (*Linn.*) Notched-leaved Passion-flower. Flowers large, greenish-white, purple, fragrant. Native of West Indies, Surinam.—*Hort. Cal. p.* 81.

337. P. QUADRANGULARIS, (*Linn.*) Granadilla Vine.

Remarks.—This is one of the largest and finest of the Passion-flowers, has leaves five or six inches long, and luxuriant four-cornered ligneous stems, the flowers are very large, whitish rose-coloured, variegated with blue, fragrant. The fruit Sabine describes as very large and oblong shaped, about six inches in diameter, from the stalk to the eye, and fifteen inches in circumference. It is externally of a greenish-yellow—when ripe, soft and leathery to the touch, and quite smooth; the rind is very thick, and contains a succulent pulp of a purple colour (which is the edible part), mixed with the seed in a sort of sack from which it is readily separated. Wine and Sugar are commonly added to it when used The flavor is sweet and slightly acid, and it is very grateful to the taste, and cooling in a hot climate. Native of Jamaica—*Loud. Encyclop. of Plants, p.* 564; *Hort. Cal. p.* 81.

338. P. LAURIFOLIA, (*Linn.*) Laurel-leaved Passion-flower.

Remarks.—A handsome climber with dark green ovate leaves, and beautiful large, blue flowers, variegated with several colours, fragrant. The fruit about the size of a hen's egg but rather more elongated, and tapering equally at both ends; when ripe, it is yellow and dotted over with white spots; it contains a whitish watery pulp, which, in the West Indies, is usually sucked through a small hole made in the rind; the rind is tough soft, and thin; the juice has a peculiar aromatic flavor, is delicately acid, and allays thirst agreeably. It has never fruited in the Madras Gardens. Native of the West Indies. Surinam.—*Loud. Encyclop of plants, p.* 565; *Hort. Cal. p.* 81.

339. P. BUONAPARTEA. Buonaparte's Passion-flower. A very beautiful climber with handsome large, blue flowers, variegated with several colours. Native of the Organ mountains.

340. P. CÆRULEA, (*Linn.*) Blue Passion-flower. Flowers large, pale-green, variegated with deep-green, blue, &c. Native of Brazil.—*Hort. Cal. p.* 81.

341. P. FŒTIDA, *(Cav.)* Fœtid Passion-flower. An annual, hairy plant, with largish, greenish-white flowers; whole plant fetid.—*Gra. Cat. B. pl. p.* 80; *Hort. Cal. p.* 81.

342. P. KERMESINA, *(Lk. Otto.)* Crimson Passion-flower. Native of Buenos Ayres.

343. P. MIDDLETONIANA, *(Paxton.)* Middleton's Passion-flower. Flowers rose, variegated with several colours, fragrant. Native of South America.

344. P. LUNATA, *(Willd.)* Crescent-leaved Passion-flower. Flowers small, white. Native of Jamaica.

345. P. HOLOSERICEA, *(Willd.)* Silky-leaved Passion-flower. Flowers small, white and yellow, variegated. Native of Vera Cruz.

346. P. LUTEA, *(Willd.)* Yellow-flowering Passion-flower. Native of America.

MURUCUJA, *(Tourn.)* The name of these plants in Brazil.

347. M. OCELLATA, *(Pers.)* Purple Murucuja. A small climbing plant, with largish, purple flowers. Native of the West Indies.—*Hort. Cal. p.* 81.; Passiflora murucuja, *Willd.*

ORDER XLVIII. TURNERACEÆ. D. C.

TURNERA TRIBE.

Description.—Herbs, sometimes shrubby plants, having a Cistus-like habit, with alternate, exstipulate, pubescent leaves. Calyx 5-lobed, bearing 5 petals and 5 stamens. Ovary free, 1-celled, with 3 parietal placentas and 3 styles which are often forked or multifid at the apex. Fruit a 3-valved capsule. Seeds albuminous, strophiolate at one side.

Distribution.—Natives exclusively of the West Indies and South America. Known species 60.

Properties.—Unimportant.—*Balfour's Outlines of Botany, p.* 437; *Lindl. V. K. p.* 347.

TURNERA. Linnæus dedicated this genus to the memory of William Turner, Prebendary of York, Canon of Windsor, &c., author of a "New Herbal," 1551, fol., he died in 1568.

348. T. ULMIFOLIA, *(Linn.)* Elm-leaved Turnera.

349. T. β, (*angustifolia.*) Narrow-leaved variety. A very common herbaceous plant; grown in gardens; has yellow Cistus looking flowers, growing on the leaf stalk. Native of Jamaica. Domesticated in India.—*Gra. Cat. B. pl. p.* 81.

350. T. TRIONIFLORA, (*Linn.*) A small shrubby plant, with large cream-coloured flowers, with a dark purple eye. Native of Brazil, Trinidad and Mexico.—*Hort. Cal. p.* 85.

ORDER XLIX. PORTULACACEÆ. JUSS.

PURSLANE TRIBE.

Description.—Succulent herbs or shrubs, with alternate or opposite, entire, exstipulate leaves. Calyx of 2 coherent sepals. Petals 5. Stamens variable in number, sometimes opposite the petals; anthers versatile. Ovary 1-celled, formed of 3 united carpels. Fruit capsular, usually dehiscent by valves or by a lid. Seeds numerous, albuminous, attached to a central placenta; embryo peripherical This order has the stamens sometimes hypogynous, and it has been placed near Caryophyllaceæ by some authors.

Distribution.—The plants are found in dry places, in various parts of the world, more particularly in South America and at the Cape of Good Hope. Known species 184.

Properties.—Esculent and antiscorbutic qualities prevail in the order. Some have showy flowers which are ephemeral.—*Balfour's Outlines of Botany, p.* 437; *Lindl. V. K. p.* 500.

PORTULACA. (*Linn.*) So named, from *porto*, to carry, and *lac*, milk; juicy nature of the plants.

351. P. GRANDIFLORA, (*Hook.*) Large-flowered Purslane. A pretty little succulent annual, opening its flowers in the sun, which are of various colours, some of them very brilliant. Native of Chili.

352. P. OLERACEA, (*Linn.*) Common Purslane. Paropoo keray, Corie keeray, *Tam.* Pedda pail kura, *Tel.* Lonia, *Hind.* Buro-looniya, *Beng.*

Remarks.—An annual, herbaceous plant, common every where; used as spinach and in curries, almost tasteless. It is also used medicinally. Flowers small, yellow.—*W. and A. Prod. p.* 356; *Roxb. fl. Ind.* II. *p.* 463.

353. P. QUADRIFIDA, (*Linn.*) Creeping Purslane. Passelie keeray, *Tam.* Sun pail kura, *Tel.*

Remarks.—A small troublesome weed with fleshy leaves used as greens; flowers small, yellow. Common.—*W. and A. Prod. p.* 356; *Jaffrey's Hints. p.* 58; *Wight's Illustr. fig.* 109.

TRIANTHEMA, *(Linn.)* So named from *treis*, three, and *anthos*, a flower; flowers usually disposed in threes.

354. T. OBCORDATA, (*Roxb.*) Purslane leaved Trianthema. Sharunnay, *Tam.* Ghelijehroo, *Tel.* Sabuni, *Beng.*

Remarks.—A troublesome weed, springs up every where; the young leaves used as spinach, when somewhat old mixed with others and used as greens. The root which is bitter and nauseous is given in powder in combination with ginger as a cathartic, when taken fresh it is somewhat sweet. Flowers small, greenish-white.—*W. and A. Prod. p.* 355; *Wight's Icon. fig.* 288; *Roxb. fl. Ind.* II. *p.* 445; *Jaffrey's Hints, &c.*

355. T. DECANDRA, (*Linn.*) Trailing Trianthema. Vellay Sharunnay, *Tam.* Tella Ghalijeroo, *Tel.* Gada buni, *Beng.*

An annual; flowers small, greenish-white, the roots are medicinal. A common weed.—*W. and A. Prod. p.* 355; *Wight's Icon. fig.* 296; *Roxb. fl. Ind.* II. *p.* 444.

ORDER L. CRASSULACEÆ. D. C.; LINDL.

HOUSE LEEK TRIBE.

Description.—Succulent herbs or shrubs, with exstipulate leaves and cymose, often secund flowers. Sepals 3-20, more or less combined. Petals 3-20, separate or united. Stamens equal in numbers to the petals, or twice as many. Carpels 1-celled, of the same number as the petals, having hypogynous scales at the base. Fruit follicular. Seeds numerous, albuminous.

Distribution.—Natives of dry places all over the world. They are found in the driest situations, where not a blade of grass or a particle of moss can grow, on naked rocks, old walls, sandy hot plains, alternately exposed to the heaviest dews of night and the fiercest rays of the noon-day sun. Soil is to them a something to keep them stationary, rather than a source of nutriment, which in these plants is conveyed by myriads of mouths invisible to the naked eye, but covering all their surface, to the juicy beds of cellular tissue which lie beneath them. Known species 450.

Properties.—Acridity prevails in many plants of this order. Some species are refrigerant, others astringent.—*Balfour's Outlines of Botany, p.* 438; *Lindl. V. K. p.* 344.

KALANCHOE, *(Adanson.)* The Chinese name of one of the species.

356. K. CRENATA, (*Haw.*) Crenated Kalanchoe. A suffruticose, fleshy plant, with obovate, doubly crenate leaves, and small, yellow flowers.

Bryophyllum, (*Salisbury.*) So named from *bryo*, to grow, and *phyllon*, a leaf; in reference to the circumstance of the leaf when laid upon damp earth emitting roots, whence arise young plants.

357. B. calycinum. (*Salisb.*) Large cupped Bryophyllum. Air-plant.

A fleshy, erect, suffruticose plant, with thick, opposite leaves, and showy pendulous yellowish red flowers, in large terminal, panicled cymes. They come out in the cold season. Introduced into India by Lady Clive, from the Moluccas in 1799, and is now quite domesticated.—*W. and A. Prod. p.* 360; *Gra. Cat. B. pl. p.* 82; *Hort. Cal. p.* 268.

Order LI. MESEMBRYACEÆ or FICOIDEÆ. Lindl. Juss.

Fig-Marigold Tribe.

Description.—Succulent shrubs or herbs, with opposite, simple leaves, and often showy flowers. Sepals 4-8, more or less united. Petals and stamens indefinite. Capsule usually many-celled, opening in a stellate manner; placenta central or parietal. Seeds numerous, albuminous; embryo curved or spiral.

Distribution.—The hottest sandy plains of the Cape of Good Hope nourish the larger part of this order. A few are found in the South of Europe, North of Africa, Chili, China, Peru, and the South Seas. Known species 375.

Properties.—Some of the plants are esculent, others furnish alkaline matter, while a few are diuretic.—*Balfour's Outlines of Botany, p.* 439; *Lindl. V. K. p.* 525.

Mesembryanthemum, (*Linn.*) So named from *mesembria*, midday, *anthemon*, a flower.

358. M. crystallinum, (*Linn.*) Ice plant. This plant is so called on account of the watery vesicles on its surface; its juice is said to be diuretic, and has been prescribed in dropsy and liver complaints. (*Lindl.*) Flowers smallish, white. Native of Greece.

359. M. Aitoni, (*Jacq.*) Aiton's Fig Marigold. A small herbaceous plant, with thick fleshy leaves, and smallish, pink flowers. Native of the Cape of Good Hope.

ORDER LII. CACTACEÆ. LINDL.

INDIAN FIG TRIBE.

Description.—Succulent, often spiny herbs, with remarkable stems, which are angular, two-edged, or leafy, and have the woody matter often arranged in a wedge-like manner. Calyx of numerous sepals combined and epigynous. Petals indefinite. Stamens indefinite, with long filaments. Ovary 1-celled with parietal placentas; style single; stigmas several. Fruit baccate. Seeds exalbuminous.

Distribution.—Natives of America. Known species about 800.

Properties.—The fruit of many of the Indian Figs is sub-acid and refreshing. In some instances, it is sweetish or insipid. The stems of some of the species are eaten by cattle. The plants of the Cactus tribe present remarkable stems; some spherical, sometimes articulated or jointed, and sometimes assuming the form of a tall upright polygonal column.—*Balfour's Outlines of Botany, p.* 439; *Lindl. V. K. p.* 746.

MELO-CACTUS. (*C. Bauhin.*) So named from *melos*, a melon, and *cactus*; in allusion to the appearance of the plants.

360. M. COMMUNIS, (*L. and. O.*) Common Melon Thistle, or Turk's Cap. This plant appears like a large fleshy melon, with deep ribs, set all over with strong sharp thorns. Flowers white. Native of the West Indies.

OPUNTIA, (*Tournefort.*) Some of the species are plentiful near Opus, a city of Locris.

361. O. DILLENII, (*Haw.*) Hedge Prickly Pear or Nopaul. Chuppautheemoolloo, *Tam.* Flowers bright yellow. Native of South America. Domesticated all over India.—*W. and A. Prod. p.* 363; *Wight's Illustr. fig.* 114; *Hort. Cal. p.* 62. Cactus Dillenii, *Ker.*; C. Indicus, *Roxb. fl. Ind. II, p.* 475.

362. O. SPINOSISSIMA, (*Haw.*) Spined Opuntia. Flowers smallish, deep orange. Native of Jamaica.—*Hort. Cal. p.* 62.

363. O. COCHINELLIFERA, (*Haw.*) Cochineal plant. Flowers long, with the petals bright rose-coloured at several periods of the year: employed in the West Indies successfully for rearing the Cochineal insect. Native of South America.—*Hort. Cal. p.* 63.

CEREUS, (*Decandolle.*) So named from *Cereus*, signifying

pliant, like wax; referring to the shoots of some of the species being easily bent.

364. C. GRANDIFLORUS, (*Mill.*) Night blowing Cereus. A climbing plant; stem rooting, 5 or 6 angled; flowers very large, white, fragrant. Native of the West Indies.—*Hort. Cal. p.* 61; Cactus grandiflorus, *Linn.*

365. C. TRIANGULARIS, (*Haw.*) Three cornered Cereus. A large creeping plant, with very large, handsome, white flowers, fragrant. Native of Mexico and the W. Indies.—*Hort. Cal. p.* 61; *Gra. Cat. B. pl. p.* 83; Cactus triangularis, *Linn.*

366. C. HEXAGONUS, (*Haw.*) Six cornered Cereus. Flowers large, white, fragrant. Native of Surinam.—*Hort. Cal. p.* 61; Cactus hexagonus, *Linn.*

EPIPHYLLUM, (*Haworth.*) From *epi*, upon, and *phyllon*, a leaf; alluding to the flowers growing from the flat branches, which appear like leaves.

367. E. PHYLLANTHOIDES, (*Hook.*) Hooker's Leaf-Cactus. Flowers largish, white. Native of Mexico.—*Hort. Cal. p.* 62.

368. E. TRUNCATUM, (*Don.*) Truncate Epiphyllum. A small, but beautiful plant. Native of Brazil. The flowers appear during the cold season. They are of a pretty red, or rose colour.—*Gra. Cat. B. pl. p.* 83.

PERESKIA, (*Plumier.*) Named in honour of Nicholas F. Pieresk, of Aix, in Provence, a lover of Botany.

369. P. BLEO. (*H. B. Kth.*) Bleo or Barbadoes Gooseberry. A scandent shrub with smooth leaves and thorns in their axils. Flowers largish, deep-rose coloured. Native of New Granada, Mexico.—*Hort. Cal. p.* 63.

ORDER LIII. UMBELLIFERÆ OR APIACEÆ, JUSS. LINDL.

UMBELLIFEROUS TRIBE.

Description.—Herbs, with solid or hollow stems, alternate leaves generally compound and sheathing at the base, and umbellate, involucrate

flowers. Calyx adherent to the bicarpellary ovary, limb 5 toothed or obsolete. Petals 5, inflexed at the point, often unequal, the outer ones being radiant. Stamens 5, alternate with the petals, and inserted with them on the outside of an epigynous disk or stylopod, styles 2. Fruit a cremocarp (diachænium), the 2 carpels or mericarps separating when ripe by their inner faces or commissure, and being suspended by a forked carpophore; the carpels marked with ribs or ridges called juga and intervening spaces called valleculæ, and often containing vittæ. Seed solitary, pendulous; embryo minute, in the base of horny albumen. The Sections formed from the nature of the albumen, whether flat or curved, are not now adopted, inasmuch as they are found to be unsatisfactory. In the genera, the ridges on the fruit, the presence or absence of vittæ, and the form of the albumen, are taken into account. The umbels are sometimes reduced to a sort of head by the absence of peduncles.

Distribution.—Natives chiefly of the northern parts of the northern hemisphere, inhabiting groves, thickets, plains, marshes and waste places. They appear to be extremely rare in all tropical countries, except at considerable elevations, where they gradually increase in number as the other parts of the vegetation acquire an extra-tropical, or mountain character. Known species 1,500.

Properties.—The properties of umbelliferous plants are various. Some are harmless and esculent, such as the Carrot, Parsnip, Skirret, and Parsley; others are acro-narcotic poisons, as Hemlock; a third set are antispasmodic, owing to the presence of a gum resin containing a fetid sulphur oil, such as Assafœtida; while a fourth set are carminative from containing a volatile oil, as Caraway (*Carum Carui*), and Coriander. *Conium maculatum*, Hemlock, used medicinally as an anodyne, contains a very active volatile oleaginous alkali called Conia, which causes death by paralysing the muscles of respiration. Of the Indian species of this order none have been found poisonous.—*Balfour's Outlines of Botany, p.* 442; *Lindl. V. K. p.* 773.

CORIANDRUM, (*Linn.*) So named from *koris*, a bug; alluding to the smell of the leaves.

370. C. SATIVUM, (*Linn.*) Coriander. Cothamallie, *Tam.* Dhanilie, *Tel.* Dhunya, *Hind.*

An aromatic herb, young leaves used in curries, seeds for similar purposes; likewise, in confections and decoctions: of easy culture; raised from seed, will grow in any kind of soil. Flowers small, white. Native of Greece, Levant, Tartary. Cultivated in India.—*Jaffrey's Hints, p.* 39; *Hort. Cal. p.* 23.

APIUM, (*Linn.*) Derived from the celtic word *apon*, water; in allusion to the place where the plants grow.

371. A. GRAVEOLENS, (*Linn.*) Common Celery.

The blanched stalks of this plant forms one of the best salads, and the green leaves are used in soups. Flowers greenish-white. Native of the whole of Europe down to Caucasus. Falkland-islands. Cultivated in India.—*Hort. Cal. p.* 20; *Jaffrey's Hints. p.* 38.

PETROSELINUM, (*Hoffmann.*) So named from *petros*, a rock, and *selinon*, parsley; habitation of the species.

372. P. SATIVUM, (*Hoffm.*) Common Parsley. A well known seasoning herb, used in soups, garnishing, &c. Flowers small, yellowish. Native of Sardinia, Greece, Turkey, near Constantinople, &c.—*Hort. Cal. p.* 21.

DAUCUS, (*Tourn.*) From *daio*, to make hot; in allusion to its supposed effect in medicine.

373. D. CAROTA, (*Linn.*) Common Carrot; of this plant there are two or three varieties. It is cultivated all over India, and "forms a staple article of food in the eastern parts of the Deccan, during the cold season." Flowers, small cream coloured.—*Hort. Cal. p.* 23.

HYDROCOTYLE, (*Tournefort.*) So named from *hydor*, water, and *cotyle*, a cavity; in reference to the plants growing in moist situations, and the leaves being hollowed like cups.

374. H. ASIATICA, (*Linn.*) Indian Penny-wort. A small, herbaceous, creeping plant: flowers small, purplish red. Native of Asia, Africa, and America.—*W. and A. Prod. p.* 366; *Wight's Icon. fig.* 565; *Hort. Cal. p.* 20; *Gra. Cat. Bomb. pl. p.* 84.

ORDER LIV. ARALIACEÆ. LINDL.

ARALIA TRIBE.

Description.—Trees, shrubs, or herbs, with the habit of Umbelliferæ, from which they differ in having the ovary composed of more than 2 carpels which do not separate in fruit, but become drupaceous or baccate, and in having fleshy in place of horny albumen.

Distribution.—The species are found in tropical and sub-tropical regions and even in some of the coldest, as in the United States, Canada, the north-west coast of America, and Japan. Known species 160.

Properties.—The qualities of the order are aromatic, stimulant, and tonic.—*Balfour's Outlines of Botany, p.* 443; *Lindl. V. K. p.* 780.

ARALIA, (*Linn.*) A name of unknown meaning, under which one species was sent to Fagon from Quebec in 1764, by a French physician.

375. A. PAPYRIFERA, (*Hooker.*) Rice paper plant. Bok-shung of the Chinese. This plant supplies the celebrated Chinese Rice paper; it is largely cultivated in many parts of the Island of Formosa, and forms one of the chief articles of export.—*Balfour's Cyclop. of Ind.*

PANAX, (*Linn.*) So named from *pan*, all, and *akos*, a remedy; in allusion to the miraculous virtues ascribed to *P. quinquefolia.*

376. P. FRUTICOSUM, (*Linn.*) Shrubby Panax. A shrub with large supra-decompound leaves, and small, brownish-green flowers. The pulp of the berries stains paper of a dark violet colour. Whole plant, especially when dried, smelling strongly of celery. Native of the Moluccas and Java.—*Roxb. fl. Ind. II. p.* 76; *W. and A. Prod. p.* 376; *Wight's Icon. fig.* 573; *Gra. Cat. B. pl. p.* 85; *Hort. Cal. p.* 24.

377. P. COCHLEATUM, (*D. C.*) Shell-leaved Panax. A shrub; does not flower in Madras. Native of the Moluccas.—*Hort. Cal. p.* 24; *Gra. Cat. B. pl. p.* 85.

HEDERA, (*Swartz.*) The name appears to be derived from *hedra*, a Celtic word signifying a cord, and the English name, Ivy, is derived from *iw*, a word in the same language, signifying green, from its being always green.

378. H. HELIX, (*Linn.*) Common Ivy.

Remarks.—This is a rare plant on the plains. Grows well at the Nilagiris. It requires great care and seldom grows to any size. It is found commonly wild in England, and is dispersed through many distant parts of the old world, lying between the Canaries and Europe on the west, and the northern parts of China, on the east. The ancients held Ivy in great esteem, and Bacchus is represented crowned with it to prevent intoxication.—*Balfour's Cyclop. of Ind.*

PARATROPIA, (*D. C.*) So named from *paratrope*, a bending; in allusion to the bent petioles.

379. P. DIGITATA, (*Voigt.*) Digitate, leaved Paratropia. A large shrub; flowers small, greenish-yellow. Circars, Luksh-

mepur.—*Hort. Cal. p.* 25; P. Venulosa, *W. and A. Prod. p.* 377; *Wight's Illustr. fig.* 188; Aralia digitata, *Roxb. fl. Ind.* II. *p.* 107.

ORDER LV. CAPRIFOLIACEÆ. RICH.

HONEY-SUCKLE TRIBE.

Description.—Shrubs or herbs, often twining, with opposite, exstipulate leaves. Calyx adherent to the ovary, limb 4-5-cleft, usually bracteated. Corolla regular or irregular. Stamens 4-5, alternate with the corolline lobes. Ovary 3-5-celled; stigmas 3-5. Fruit usually a berry, one-celled, crowned by the calyx lobes. Albumen fleshy.

Distribution.—Natives chiefly of the Northern parts of Europe, Asia and America. Known species, 220.

Properties.—The fragrance and beauty of Honey-suckles have been celebrated by the poets of every age; but independently of such a recommendation, the Order of Caprifoils possesses properties of considerable interest. Some of the plants are astringent; others are emetic and purgative. The wine made from the Elder, *Sambucus nigra*, is well known in England, and is used as a means of adulterating Portwine.—*Balfour's Outlines of Botany, p.* 444; *Lindl. V. K. p.* 766.

CAPRIFOLIUM, (*Romer et Schultes.*) Called poetically goat-leaf; and is derived from *caper*, a goat, and *folium*, a leaf; in reference to the climbing and turning habit of the plant.

380. C. SEMPERVIRENS. (*R. et S.*) Evergreen or Trumpet Honey-suckle. A very pretty twining plant, with largish, scarlet flowers. Native of North America.—Lonicera sempervirens.—*D. C.*; *Gra. Cat. B. pl. p.* 86.

LONICERA, (*Linn.*) Named after Adam Lonicer, a German botanist, who died in 1596.

381. L. LESCHENAULTII, (*Wall.*) Leschenault's Honey-suckle. A twining shrub; native of the Neilgherries.—*Gra. Cat. B. pl. p.* 87; *Wight's Illustr. fig.* 120.

ORDER LVI. CINCHONACEÆ OR RUBIACEÆ. LINDL; JUSS.

CINCHONA TRIBE.

Description.—Trees, shrubs, or herbs, with simple opposite leaves, interpetiolar, glandular stipules and cymose inflorescence. Calyx adherent, entire or toothed. Corolla regular. Stamens attached to the corolla. Ovary 2-celled; style one. Fruit inferior, separating into 2 cocci, or in-

dehiscent and dry, or succulent. Seeds definite and erect or ascending, or indefinite and attached to a central placenta; embryo small, in horny albumen.

Distribution.—Chiefly found in tropical regions. Known species, including those of the Rubiaceæ 2870.

Properties.—This extensive order furnishes many important products. The plants have tonic, stimulant, febrifugal, emetic, and purgative properties. Some species are said to have intoxicating and even poisonous qualities. Many of the plants of the order have flowers remarkable for their beauty and odour. *Cephalis Ipecacuanha* has an annulated root which is the ipecacuan of the Pharmacopœias. *Cinchona* is the genus which furnishes the species of Peruvian-bark trees. They contain three important alkalies, Quinine, Quinidine, and Cinchonine, combined with Kinic acid and a peculiar variety of tannin. An astringent extract called Gambeer is prepared by the Malays from the leaves of *Uncaria Gambir.*—*Balfour's Outlines of Botany, p.* 444; *Lind. V. K.* 761.

NAUCLEA, (*Linn.*) So named from *naus*, a ship, and *kleio*, to inclose; the half capsule is hull-shaped.

382. N. PARVIFOLIA, *Roxb.* Small-leaved Nauclea. A large timber tree; wood light chestnut coloured, firm, close-grained, used for various purposes connected with gunnery, but soon rotting, if exposed to wet. Flowers small, yellow. Native of Coromandel, the Concans. Common in the Mawul districts, &c.—*Roxb. fl. Ind.* I. *p.* 513; *W. and A. Prod. p.* 391; *Wight's Illustr. fig.* 123; *Hort. Cal. p.* 375; *Gra. Cat. B. pl. p.* 87.

383. N. CADAMBA, (*Roxb.*) Kudum tree. Vella Cattamba, *Tam.*

Remarks.—This tree grows to a very large size in the Deccan where it is common about villages; the fruit is eaten by the natives, who esteem the tree as "holy." (*Riddell.*) Its large glossy leaves afford a thick and beautiful shade; and, in Indian Mythology, it is one of the four shady trees that grew on Mount Meru,—viz. The Eugenia, the Nauclea cadamba, the Banyan, and the Peepul.—Flowers small, orange coloured, sweet scented. Native of Bengal, Silhet, Patna, &c.—*Roxb. fl. Ind.* I. *p.* 515; *Gra. Cat. B. pl. p.* 87; *Hort. Cal. p.* 375; *Balfour's Cyclop. of Ind.*

MUSSÆNDA, (*Linn.*) The Singhalese name of the following species.

384. M. FRONDOSA, (*Linn.*) Burmann's Mussænda.

Remarks.—A shrub; flowers of a deep golden colour. It is easily distinguished by the large white *bractea* formed leaf, growing out of the calyx; the natives about Bombay use it as a charm to drive away demons. Native of Ceylon, Coromandel, Courtallum, common on the Ghauts, &c.—*W. and A. Prod. p.* 393; *Roxb. fl. Ind.* I. *p.* 557; *Gra. Cat. B. pl. p.* 88; *Wight's Illustr. fig.* 124; *Hort. Cal. p.* 377

MANETTIA, (*Mutis.*) In honour of Xavier Manetti, prefect of the botanic garden at Florence, and author of Regnum Vegetabile, 1756.

385. M. CORDIFOLIA. (*Mart.*) Heart-leaved Manettia. A small climbing plant, with showy, largish, scarlet flowers. Roots an excellent remedy in dropsy and dysentery. *Mart.* Native of Brazil.—*Hort. Cal. p.* 376.

CATESBÆA, (*Linn.*) After Mark Catesby, author of the Natural History of Carolina.

386. C. SPINOSA, (*Willd.*) Spiny Catesbæa. A shrub; flowers large, trumpet shaped, of a greenish-yellow colour; fruit edible—recently introduced into Madras. Native of South America.

GARDENIA, (*Ellis.*) Named in compliment to Alexander Garden, M. D., of Charleston, Carolina, a Correspondent of Ellis and Linnæus.

387. G. ENNEANDRA, (*Kœn.*) A small tree; flowers large, white, fragrant. Native of the hills in the Circars and Carnatic, Tull Ghaut, &c.—*W. and A. Prod. p.* 394; *Gra. Cat. B. pl. p.* 88; *Hort. Cal. p.* 378.

388. G. LATIFOLIA, (*Ait.*) Broad-leaved Gardenia. A small tree, unarmed; leaves opposite or in threes. Flowers large, white, fragrant. Fruit large, round. Native of the Southern Peninsula of India, &c.—*W. and A. Prod. p.* 395; *Gra. Cat. B. pl. p.* 88; *Hort. Cal. p.* 378.

389. G. GUMMIFERA, (*Linn.*) Gum-yielding Gardenia. A large shrub or small tree; flowers large, white, in the evening becoming yellow, fragrant. From the buds and wounds made in the bark exudes a beautiful yellow resin.—*Roxb. W. and A. Prod. p.* 395; *Roxb. fl. Ind.* I, *p.* 709; *Gra. Cat. B. pl. p.* 88; *Hort. Cal. p.* 378.

390. G. FLORIDA, (*Linn.*) Large Wax-flower shrub. A small, unarmed shrub of slow growth; flowers large, white, very fragrant.

Native of China. Cultivated in Japan, the Moluccas, and India. —*Roxb. fl. Ind.* I, *p.* 703; *Gra. Cat. B. pl. p.* 88; *Hort. Cal. p.* 377.

GRIFFITHIA, (*W. and A.*) Named in honor of Dr. Griffith.

391. G. FRAGRANS, (*W. and A.*) Sweet-scented Griffithia. An armed shrub with white flowers in terminal corymbs; fruit red, size of a pea. Native of the South Concan, &c.—*W. and A. Prod. p.* 400; *Wight's Icon. fig.* 310; *Gra. Cat. B. pl. p.* 89.

STYLOCORYNE, (*Cav.*) So named from *stylos*, a style, and *koryne*, a club; the styles are club-shaped.

392. S. WEBERA, (*A. Rich.*) A large, branched shrub, with small white flowers in terminal corymbs. Native of Coromandel, S. Concan. Goa jungles. Penang.—*W. and A. Prod. p.* 401; *Gra. Cat. B. pl. p.* 89; *Wight's Icon. fig.* 309; *Hort. Cal. p.* 377.

HEDYOTIS, (*Linn.*) So named from *hedys*, sweet, and *ous*, an ear; alluding to the sweet-scented ear-like leaves.

393. H. UMBELLATA, (*Brown.*) Indian Madder. Sirroo vayr, also Chāya vayr, Tam. A suffruticose plant; flowers small, white. Root used in dyeing red, purple, and brown orange.—*W. and A. Prod. p.* 413; *Gra. Cat. B. pl. p.* 90.

MORINDA, (*Ventinat.*) Altered from *Morus Indica*, or Indian Mulberry, because of the shape of the fruit, and native country.

394. M. CITRIFOLIA, (*Linn.*) Indian Mulberry. Nonna marum or Manja pavettei, Noona, *Tam.*

Remarks.—A small tree; flowers small, white; the fruit is used medicinally by the Cochin-Chinese. A scarlet dye is procured from the root, used for handkerchiefs, turbans, &c. The colouring matter resides chiefly in the bark of the roots. This tree is much cultivated in the Bombay Presidency.—*W. and A. Prod. p.* 419; *Roxb. fl. Ind.* I. *p.* 541; *Gra. Cat. B. pl. p.* 90; *Hort. Cal. p.* 385.

395. M. TINCTORIA, (*Roxb.*)

Remarks.—A small tree, is considered to be the same species as the last in its wild state. It is common in most parts of India. The green fruit is eaten by the natives in their curries. The wood is hard, very durable, variegated red and white, and employed for gun stocks in preference to any other wood. This latter is the Luagroo of the Teloogoos. Flowers small, white.—*W. and A. Prod. p.* 419 ; *Roxb. fl. Ind.* I. *p.* 543 ; *Gra. Cat. B. pl. p.* 90 ; *Hort. Cal. p.* 386.

396. M. BRACTEATA, (*Roxb.*) A small tree, with large, green shining leaves, and small white flowers. Native of the Moluccas, Andaman and Philippine Islands, Pegu, &c.—*W. and A. Prod. p.* 419 ; *Roxb. fl. Ind.* I. 544 ; *Wight's Illustr. fig.* 126 ; *Hort. Cal. p.* 386.

GUETTARDA, (*Ventenat.*) In honor of Etienne Guettard, a French botanist.

397. G. SPECIOSA, (*Linn.*) Great flowered Guettarda. Panneer marum, *Tam.* A small tree with large, white, fragrant flowers ; in blossom throughout the year. The tree is sacred both to Siva and Vishnoo. (*Riddell.*) Coromandel in Gardens. Singapore.—*W. and A. Prod. p.* 422 ; *Roxb. fl. Ind.* I. *p.* 686 ; *Gra. Cat. B. pl. p.* 91 ; *Hort. Cal. p.* 387 ; *Bal. Cyclop. of Ind.*

HAMILTONIA, (*Roxb.*) In honor of Mr. Hamilton, of Woodlands, near Philadelphia, an eminent botanist, and the first to erect a conservatory in North America, for the preservation of plants of hot climates.

398. H. SUAVEOLENS, (*Roxb.*) Sweet-scented Hamiltonia. A small, shrubby plant; flowers small, white, fragrant. Introduced from the Calcutta Botanic Gardens, 1858. Native of the Rajmahal hills.—*Hort. Cal. p.* 387.

IXORA, (*Linn.*) After Iswara, a Malabar deity, to which the flowers of some are offered.

399. I. COCCINEA, (*Linn.*) Scarlet Ixora, or Flame of the Forest. A pretty shrub, with bright scarlet flowers in terminal

corymbs. Native of China, Travancore, Ceylon. Common in gardens.—*W. and A. Prod. p.* 427 ; *Wight's Icon. fig.* 153 ; *Roxb. fl. Ind.* I. *p.* 375 ; *Gra. Cat. B. pl. p.* 91 ; *Hort. Cal. p.* 389.

400. I. BANDHUCA, (*Roxb.*) Jungle Geranium. A spreading, bushy shrub ; smaller than the last species ; flowers large, of a scarlet or crimson colour. Native of Hindoostan.—*Roxb. fl. Ind.* I. *p.* 375 ; *Wight's Icon. fig.* 149 ; *Gra. Cat. B. pl. p.* 92 ; *Hort. Cal, p.* 389.

401. I. STRICTA, (*Roxb.*) Upright Ixora. An erect growing shrub ; flowers pinkish scarlet. Native of China, Manilla, Moluccas, Cochin-China.—*Roxb. fl. Ind.* I. *p.* 379 ; *W. and A. Prod. p.* 427 ; *Gra. Cat. B. pl. p.* 92 ; *Wight's Icon. fig.* 184 ; *Hort. Cal. p.* 389.

402. I. INCARNATA, (*Roxb.*) A small shrub ; flowers largish, pale rose coloured. Native of China.—*Hort. Cal. p.* 390.

403. I. ALBA, (*Roxb.*) White Ixora. An ornamental shrub ; flowers pure white. Native of China.—*Hort. Cal. p.* 390.

404. I. PARVIFLORA, (*Vahl.*) Torch shrub. Soowndeccuttay, also Karang cuttay, *Tam.* Gundhal-rungun, *Beng.*

Remarks.—This is a small tree employed by the poor for beams and posts. It burns very readily, and clearly, and, on that account, the branches of it are often made into torches by people travelling in the night. Flowers white, in terminal panicles. Native of Coromandel, &c. Common. —*Roxb. fl. Ind.* I. *p.* 383 ; *W. and A. Prod. p.* 429 ; *Gra. Cat. B. pl. p.* 92 ; *Wight's Icon. fig.* 711 ; *Balfour's Cyclop. of India.*

PAVETTA, (*Linn.*) The name of the following species in Malabar.

405. P. INDICA, (*Linn.*) Indian Pavetta. Pavuttei, *Tam.* Paputta, *Tel.* Kookoor-choora, *Beng.*

An ornamental shrub 4 or 5 feet high, leaves deciduous in the cold weather. Flowers white, fragrant, make their appearance in April and May, with the leaves. Native of Coromandel,

&c.—*W. and A. Prod. p.* 431; *Wight's Icon. fig.* 148; *Gra. Cat. B. pl. p.* 92; *Hort. Cal. p.* 391; Ixora paniculata, *Linn;* Ixora Pavetta, *Roxb. fl. Ind.* I. *p.* 385.

CHIOCOCCA, *(P. Browne.)* So named from *chion,* snow, and *kokkos,* a berry; referring to the berries, which are white, hence the name snowberry.

406. C. RACEMOSA, *(Jacq.)* Snowberry. A pretty, scandent shrub, with fragrant, pale-yellow flowers. Native of the West Indies, Mexico and Carthagena.—*Hort. Cal. p.* 389.

COFFEA, (*Linn.*) Named from Coffee, a province in Narea in Africa where it grows in abundance.

407. C. ARABICA, (*Linn.*) Common Coffee shrub. Capiecottay, *Tam.* Kaoa, *Beng.* Bhoon, *Hind.*

Remarks.—This is an erect, conical-shaped, low tree, with a light brown bark, and opposite, oblong, wavy, shining, light green leaves; flowers in clusters at the base of the leaves, white, of a grateful odour, but of short duration; berries green, red when fully grown, and black when ripe. An infusion of the toasted berry forms the well known beverage which is said to have been drunk in Ethiopia from time immemorial. "It was unknown to the ancient Greeks and Romans; the generally received opinion is, that the use of its infusion as a drink originated in Ethiopia. But the practice of drinking it in Arabia was introduced from Persia by the Mufti of Aden, in the fifteenth century. In 1554, its use first began at Constantinople, from whence it was gradually adopted in the western parts of Europe. At Marseilles it was begun in 1644. At Paris it was nearly unknown till the arrival of the Turkish ambassador, Soliman Aga, in 1669. In 1672, the first coffee-house was established in Paris by an Armenian named Pascul, but, meeting with little encouragement, he went to London, where the beverage had been previously introduced in the year 1652, when Mr. Edwards, a Turkey merchant, brought from that country a Greek servant who understood the method of preparing coffee, and first sold it in London in a house which was kept for that purpose in George Yard, Lombard Street." Native of Arabia Felix and Ethiopia, from whence carried to nearly all parts of the world within the tropics. —*Hort. Cal. p.* 392; *Wight's Icon. fig.* 53; *Loud. Encyclop. p.* 170.

HYDROPHYLAX, (*Linn.*) So named from *hydor,* water, and *phyllax,* a keeper; it grows by the sea side.

408. H. MARITIMA, (*Linn.*) Sea-side Hydrophylax. A creeping plant with lilac coloured flowers. Sand-hills along the shores of Coromandel and Malabar.—*W. and A. Prod. p.* 441;

Roxb. fl. Ind. I. p. 373 ; *Gra. Cat. B. pl. p.* 93 ; *Hort. Cal. p.* 395 ; *Wight's Icon. fig.* 760.

RONDELETIA, (*Blume.*) In honour of William Rondelet, M.D., a famous natural historian of Montpellier.

409. R. SPECIOSA, (*Loud.*) Showy Rondeletia. A small, shrubby plant, with very showy, scarlet flowers with orange centre ; in flower the whole year. Native of Havannah.

PENTAS, (*Bentham.*) So named from *pente,* five ; in allusion to the parts of the flowers being in fives instead of fours.

410. P. CARNEA, (*Benth.*) Flesh coloured Pentas. A very handsome, soft wooded shrubby plant ; flowers pink. Native of South Africa.

HAMELIA. Named by Jacquin, in honour of the distinguished botanist H. L. Du Hamel du Monceau, who died in 1782.

411. H. PATENS. (*Jacq.*) Spreading Hamelia. A handsome shrub, with tubular orange-yellow flowers. A Native of Hispaniola.

412. H. SPHÆROCARPA. (*Pers.*) Round fruited Hamelia. A shrub, flowers orange. Native of Mexico.

ORDER LVII. COMPOSITÆ OR ASTERACEÆ.
ADANS. ; LINDL.
COMPOSITE TRIBE.

Description.—Herbs or shrubs with alternate or opposite, exstipulate leaves, and hermaphrodite or unisexual flowers (called florets), collected into dense capitula on a common receptacle, and surrounded by a set of bracts (called phyllaries), forming an involucre, the separate florets being often furnished with bractlets in the form of chaff (called squamæ or paleæ). Calyx adherent, limb entire or toothed, or mostly expanded into pappus. Corolla regular or irregular. Stamens 5 ; anthers syngenesious. Ovary single ; style 1, bifid at the apex when fertile ; stigmas on the inner surface of each branch of the style. Fruit an achene, crowned with the limb of the calyx. Seed solitary, erect, exalbuminous ; embryo straight.

Distribution.—The plants are found in all parts of the world. In warm countries they sometimes assume arborescent forms. There are between 9,000 and 10,000 known species.

Properties.—The properties of composite plants are various. Bitterness seems to prevail in the order to a greater or less degree. This is accompanied with tonic, stimulant, aromatic or even narcotic qualities.

The roots of *Cichorium Intybus*, Chicory, are used as a substitute for Coffee, or as an addition to it. *C. Endivia* is the Endive or garden Succory, the leaves of which are used as a salad. *Lactuca virosa*, Wild Lettuce, gives out abundantly a white juice, which when inspissated, constitutes the Anodyne called Lactucarium, or Lettuce-opium. *L. sativa*, common Lettuce, also yields a similar juice. *Leontodon Taraxacum*, common Dandelion, has a milky juice, which when concrete has been used medicinally as a diuretic, and economically as Coffee. The dried flowers of *Carthamus tinctorious*, Safflower, yield a pink dye. *Anacyclus pyrethrum*, Pellitory of Spain, is used medicinally to promote the flow of saliva. The flowers of *Anthemis nobilis*, Chamomile, act as an emetic and diaphoretic; the extract is bitter tonic. *Arnica montana*, Leopard's-bane, or Mountain Tobacco, has been given in nervous diseases as an acrid stimulant. *Artemisia Absinthium*, and other species of Wormwood, are bitter, stomachic and anthelmintic.—*Balfour's Outlines of Botany, p.* 447 ; *Lindl. V. K. p.* 702.

SUB-ORDER I. TUBULIFLORÆ.

AGERATUM, (*Linn.*) The colours are constant, or as might be rendered, always clear; hence the name is compounded of *a*, privative, and *geras*, old.

413. A. MEXICANUM. Mexican Ageratum. An annual, with pretty, blue flowers. This plant is easily propagated by cuttings, and flowers freely during the hot weather. Native of Mexico.

CALLISTEPHUS, (*Cass.*) So named from *kallistos*, prettiest, and *phainomai*, to appear; in allusion to the flowers.

414. C. CHINENSIS, (*Nees.*) China Aster. A showy annual; flowers of various colours. Native of China.—*Hort. Cal. p.* 408 ; *Gra. Cat. B. pl. p.* 98.

SPHÆRANTHUS, (*Vaill.*) So named from *sphaira*, a globe, and *anthos*, a flower ; alluding to the globular heads of flowers.

415. S. HIRTUS, (*Willd.*) Indian globe flower. A small annual plant; flowers small, purplish. This is a widely distributed plant, frequently found in rice fields, flowering during the cold season.—*Wight's Icon. fig.* 1094; *Hort. Cal. p.* 409; S. Indicus, *Roxb. fl. Ind.* III. *p.* 446.

BRACHYCOME, (*Cass.*) From *brachys*, short, and *kome*, hair.

416. B. IBERIDIFOLIA. A showy annual; flowers largish, varying from dark purple to lilac and white. Native of Australia.

GRANGEA, (*Adanson.*) Probably after Grange, some person known to Adanson.

417. G. MADRASPATANA. (*Poir.*) Madras Grangea. An annual procumbent plant; flowers small, yellow; common near the borders of tanks all over Southern India.—*Wight's Icon. fig.* 1097; *Hort. Cal. p.* 409; Artemisia Madraspatana, *Linn.*; *Roxb. fl. Ind.* III. *p.* 422; *Gra. Cat. B. pl. p.* 102.

VICOA, (*Cass.*)

418. V. INDICA, (*D. C.*) Indian Vicoa. An annual: erect plant, with sagittate stem and clasping leaves; flowers terminal, yellow. Peninsula of India, growing under the shade of trees, in dry, uncultivated ground.—*Gra. Cat. B. pl. p.* 97; *Hort. Cal. p.* 411; *Wight's Icon. fig.* 1148.

DAHLIA, (*Cavanilles.*) In honour of Andrew Dahl, a celebrated Swedish botanist, and pupil of Linnæus.

419. D. VARIABILIS, (*Desf.*) Garden Dahlia. This is perhaps the most handsome of all the composite plants. Several varieties are cultivated in the Madras Gardens. Native of Mexico.

XANTHIUM, (*Tournefort,*) So named from *xanthos*, yellow; the plants being formerly used by the Greeks to dye their hair.

420. X. ORIENTALE, (*Linn.*) Indian Xanthium. An annual; flowers small, white.—*Hort. Cal. p.* 413; *Wight's Icon. fig.* 1104.

ZINNIA, (*Linn.*) In honor of John Godfrey Zinn, professor of Botany at Gottingen.

421. Z. ELEGANS, (*Jacq.*) Elegant Zinnia. A handsome annual; flowers of various colours, very showy; common in gardens. Native of Mexico.

422. Z. PAUCIFLORA? (*Linn.*) Yellow flowered Zinnia. An annual; flowers yellow.

WEDELIA, (*Jacquin.*) In honour of George Wolfgang Wedel, a German botanist.

423. W. CALENDULACEA, (*Nees.*) Portalei Kaiantagarei, also Murja Kursilanghinle, *Tam.* Perennial, creeping plant; leaves opposite, broad lanceolate; flowers on axillary peduncles, large, bright yellow. Ceylon, Coromandel, the Concans, &c.—*Wight's Icon. fig.* 1107; *Hort. Cal. p.* 414; Verbesina Calendulacea, *Linn.; Roxb. fl. Ind.* III. *p.* 440; *Gra. Cat. B. pl. p.* 100.

CALLIOPSIS, (*Reich.*) Derived from *kallistos*, beautiful, and *opsis*, eye; in allusion to the beautiful bright eye of the flower.

424. C. BICOLOR, (*Reich.*) A showy annual, flowers of various colours. Native of Arkansas.

425. C. GRANDIFLORA. A very pretty annual; flowers large, yellow with a dark centre.

HELIANTHUS, (*Linn.*) So named from *helios*, the sun, and *anthos*, a flower; on account of the brilliant colour of the flowers, and from the erroneous idea that the flowers always turned towards the sun.

426. H. ANNUUS, (*Linn.*) Large Sunflower plant. Sooriagainthee, *Tam.*

"————One, the lofty follower of the sun,
Sad when he sets, shuts up her yellow leaves,
Drooping all night; and when he warm returns,
Points her enamour'd bosom to his ray."

Thomson's Summer.

"From the seeds of this plant an edible oil has been expressed, and they are also excellent food for poultry." Flowers very large, yellow. Native of Peru.—*Hort. Cal. p.* 415; *Gra. Cat. B. pl. p.* 100.

427. H. TUBEROSUS, (*Linn.*) Jerusalem Artichoke. This plant which is a native of Brazil, derives its epithet *Jerusalem* from a corruption of the Italian *Girasole*, a sunflower, and Artichoke, from the resemblance, in flavour, which its tubers bear to the floral receptacles or *bottoms* of the Artichoke. Cultivated in gardens; flowers large, yellow.—*Hort. Cal. p.* 415; *Gra. Cat. B. pl. p.* 100.

SPILANTHES, (*Jacq.*) So named from *spilos*, a spot, and

anthos, a flower; in allusion to the original species having yellow flowers and a brown disk.

428. S. OLERACEA, (*Linn.*) Indian potherb. An annual plant, cultivated as a potherb; flowers yellow. Native of South America.—*Hort. Cal. p.* 416; *Wight's Icon. fig.* 1109.

TAGETES, (*Linn.*) From the beauty of the flowers, this genus is named after *Tages*, a Tuscan divinity.

429. T. PATULA, (*Linn.*) French Marigold. An annual, native of Mexico. Domesticated in India.—*Hort. Cal. p.* 416; *Gra. Cat. B. pl. p.* 99.

430. T. ERECTA, (*Linn.*) African Marigold, Gainthee, *Tam.* Common in gardens, has a fetid smell; flowers large, citron coloured. Native of Mexico. Domesticated in India.—*Hort. Cal. p.* 416; *Gra. Cat. B. pl. p.* 99.

GAILLARDIA. Named by Fougeroux, in honour of M. Gaillard de Marentonneau, an amateur botanist.

431. G. DRUMMONDII, (*D. C.*) Drummond's Gaillardia. An ornamental, perennial plant; flowers yellow with a dark centre, in flower the whole year. Native of N. America.

432. G. PICTA. Variegated Gaillardia. A similar species to the former; flowers yellow, variegated. Native of Louisiana.

ACHILLEA, (*Linn.*) Named after Achilles, a pupil of Chiron, and the first who used the plant so called in medicine.

433. A.———? A pretty, herbaceous plant, with small white flowers.

CHRYSANTHEMUM, (*Linn.*) From *chrysos*, gold, and *anthemon*, a flower; alluding to the colour of some of the flowers being yellow.

434. C. INDICUM, (*Linn.*) Christmas flower. There are several varieties of this plant with flowers of various colours, yellow, purple, white, &c. All are very ornamental. The yellow flowers are made into garlands and offered at the shrines of

Vishnoo, and Siva. They flower chiefly during the cold weather.—*Gra. Cat. B. pl. p.* 102; Pyrethrum Sinense, *D. C.; Hort. Cal. p.* 413.

Artemisia, *(Linn.)* Artemis, one of the names of Diana; the plant is said to be named after Diana, on account of its being used in bringing on precocious puberty.

435. A. indica, *(Willd.)* Indian Wormwood. Duna, and Murwa, *Hind.* Herbaceous, erect plant, 2 or 3 feet high; leaves alternate, deeply gashed. This plant is a substitute for the *A. absinthium*, the wormwood of Europe, but is considered weaker. Cultivated in India.—*Roxb. fl. Ind.* III. *p.* 419; *Gra. Cat. B. pl. p.* 102; *Hort. Cal. p.* 420; *Balfour's Cyclop. Wight's Icon. fig.* 1112.

436. A. abrotanum, *(Linn.)* Southern Wood. A small, shrubby plant, common in gardens, flowers very small, greenish white. Native of Southern Europe.—*Hort. Cal. p.* 420; *Gra. Cat. B. pl. p,* 102.

437. A. sinensis, *(Vahl.)* China Lavender. A small, shrubby plant. Native of China and Siberia.

Helichrysum, *(Vaill.)* From *helios*, the sun, and *chrysos*, gold; in allusion to the brilliant flowers.

438. H. bracteatum, *(Willd.)* An annual; flowers large, yellow. Native of New Holland.

Senecio, *(Linn.)* From *senex*, an old man; the receptacle is naked, and resembles a bald head.

439. S. vulgaris, *(Linn.)* Common Groundsel. An annual; flowers small, yellow. Native of Europe. North Africa; North and temperate Asia—*Hort. Cal. p.* 422.

Notonia, *(D. C.)*

440. N. corymbosa, *(D. C.)* Corymbose Notonia. A herbaceous plant. Flowers largish, greenish-white.—*Wight's Icon. fig.* 848.

CALENDULA, *(Linn.)* Named from *calendæ*, the first day of the month; there being flowers almost any month in the year.

441. C. OFFICINALIS, *(Linn.)* The common *marigold*, "that goes to bed with the sun, and with him rises weeping." Shakspeare calls the flowers mary-buds.

> "And winking *mary-buds* begin
> To open their golden eyes;
> With every thing that pretty bin
> My lady sweet arise."
>
> *Song in Cymbeline.*

This plant was formerly used in soups and broths, but is now little regarded.—*Gra. Cat. B. pl. p.* 101.

AMBERBOA, *(D. C.)*

442. A MOSCHATA, *(D. C.)* Sweet Sultan. An annual; flowers large, lilac purplish. Native of the Levant, and Greece. —*Hort. Cal. p.* 424; Centaurea moschata, *Linn.; Roxb. fl. Ind.* III. 444; *Gra. Cat. B., pl. p.* 95.

CENTAUREA, *(Linn.)* With one of the plants of this genus, the centaur Chiron cured the wound made in his foot by the arrow of Hercules.

443. C. CYANUS, *(Linn.)* Corn Blue Bottle. An annual flowers large, bright blue, with a purple disk. Common in corn fields throughout Europe.—*Hort. Cal. p.* 425.

CYNARA, *(Vaillant.)* So named from *knon*, a dog; in reference to the spines of the involucrum.

444. C. SCOLYMUS, *(Linn.)* Artichoke. A perennial; native of the South of Europe. This plant has a large succulent receptacle, which is used for food; seldom flowers at Madras.—*Gra. Cat. B. pl. p.* 95.

SUB-ORDER II. LABIATIFLORÆ.

BARNADESIA, *(Linn. fils.)* Named after Michael Barnadez, a Spanish botanist.

445. B. GRANDIFLORA.. Large flowering Barnadesia. A

small spiny shrub; introduced from the Calcutta Botanic gardens 1858.

SUB-ORDER. III. LIGULIFLORÆ.

CICHORIUM, *(Linn.)* The Greeks adopted this name from the Egyptians.

446. C. ENDIVIA, *(Willd.)* Common Endive. Cultivated in gardens. Flowers large, blue and white.—*Hort. Cal. p.* 428.

SONCHUS, *(Linn.)* So named from *somphos*, hollow; the stems are hollow.

447. S. CILIATUS, *(Lam.)* Sow-thistle. An annual; flowers yellow, terminal; cattle are fond of this plant, which on being wounded, yields a milky juice. Native of Europe, Peninsula of India, &c.—*Hort. Cal. p.* 432; *Wight's Icon. fig.* 1141; Sonchus oleraceus, *Roxb. fl. Ind.* III. *p.* 402; *Gra. Cat. B. pl. p.* 94.

LACTUCA, *(Linn.)* Derived from *lac*, milk; on account of the milky juice which exudes from the plants when broken.

448. L. SATIVA, *(Linn.)* Garden Lettuce. One of the best salad plants, with the culture of which every one is familliar. Flowers yellow; native country unknown.—*Hort. Cal, p.* 430; *Gra. Cat. B. pl. p.* 94.

MICRORHYNCHUS, *(Less.)*

449. M. SARMENTOSUS, *(D. C.)* A widely diffused, humble plant, with long flagelliform runners, common along the sea beach; flowers yellow.—*Wight's Illustr. fig.* 133.

ORDER LVIII. DIPSACACEÆ, LINDL.

SCABIOUS TRIBE.]

Description.—Herbs or undershrubs, with opposite or whorled, exstipulate leaves, and flowers in capitula surrounded by an involucre. Calyx adherent, membranous, surrounded by an involucel. Corolla tubular, with an oblique 4-5 lobed limb. Stamens 4, anthers distinct. Ovary 1 celled; ovule pendulous. Fruit dry, indehiscent, crowned by the pappus-like calyx. Seeds albuminous.

Distribution.—Natives of the South of Europe, the Mediterranean and the Cape of Good Hope. Known species 150.

Properties.—Unimportant. *Balfour's Outlines of Botany, p.* 447; *Lindl. V. K. p.* 669.

This order should have been placed before the preceding one, *Asteraceæ.*

SCABIOSA, (*Ræmer.*) From *scabies*, the itch; the common kind is said to cure that disorder.

450. S. ATROPURPUREA, *(Linn.)* Sweet Scabious. An annual; native country unknown. Flower heads large; florets smallish, dark purple.—*Hort. Cal. p.* 434.

ORDER LIX. SPHENOCLEACEÆ, MART.

This order comprehends only one genus, and the following marshy herb, whose properties are unknown.

SPHENOCLEA, (*Gærtn.*) From *sphen*, a wedge, and *kleia*, to enclose; the capsules are wedge shaped.

451. S. ZEYLANICA, *(Gærtn.)* An annual erect plant; flowers small, white. Found in rice fields and marshy places in most parts of India. *Roxb. fl. Ind. ed. Cary,* II. *p.* 116; *Gra. Cat. B. pl. p.* 248; S. Pongatum, *D. C.; Wight's Illustr. fig.* 138; Pongatum Indicum. *Lam.; Hort. Cal. p.* 371.

ORDER LX. LOBELIACEÆ, JUSS.
LOBELIA TRIBE.

Description.—Lactescent herbs or shrubs, with alternate, exstipulate leaves. Calyx superior, limb often 5-lobed. Corolla irregularly 5-lobed, often deeply cleft. Stamens 5, epigynous, synantherous. Stigma fringed. Fruit capsular, 1 or more celled, dehiscing at the apex. Seeds numerous, albuminous.

Distribution.—Natives chiefly of tropical or sub-tropical climates.

Properties.—The Lobeliads have usually an acro-narcotic milky juice, and hence the species are often poisonous.—*Balfour's Outlines of Botany, p.* 451; *Lindl. V. K. p.* 692.

LOBELIA, *(Linn.)* In honour of Matthew Lobel, author of various botanical works.

452. L. SUCCULENTA, *(Blume.)* Neilgherry Grass. A small, procumbent plant; is well adapted for hiding the earth in flower pots; flowers small, pink

453. L. ERINUS, *(Willd.)* This and its varieties, are very pretty, procumbent plants, generally having blue flowers; they succeed well in flower beds, raised from seed.—*Jaffrey's Hints.*

ORDER LXI. EBENACEÆ, LINDL.

EBONY TRIBE.

Description.—Trees or shrubs, not lactescent, with alternate, exstipulate, coriaceous, entire leaves, and polygamous flowers. Calyx 3-7-cleft, persistent. Corolla 3-7-cleft, often pubescent. Stamens usually twice or quadruple the number of the corolline segments; anthers with longitudinal dehiscence. Ovary 3 or several-celled; style with as many divisions; ovules 1 or 2 in each cell, pendulous. Fruit a round or oval berry; seeds large and bony, albuminous.

Distribution.—Chiefly tropical plants. Many are found in India, a few in colder climates. Known species 160.

Properties.—The trees of this order are remarkable for their hard and valuable timber. The bark of some of the species is astringent, while the fruit is in many cases eatable. The heart wood of several species of *Diospyros* constitute different kinds of Ebony.—*Balfour's Outlines of Botany, p.* 454; *Lindl. V. K. p.* 595.

DIOSPYROS, *(Linn.)* From *dios*, divine, and *pyros*, a pear; resemblance of the fruit.

454. D. SAPOTA, *(Roxb.)* Sapota Date-plum. A tree; leaves oblong-lanceolate, glabrous. Peduncles axillary on the younger branches. Flowers silky, male peduncles 3-or many flowered. Female 1-flowered, corolla urceolate with a 5-lobed spreading limb: those of the hermaphrodite flowers with about 16 stamens and a five-lobed stigma. Flowers smallish, yellow. Native of the Mauritius.—*Loud. Enclop. of plants, p.* 1536; *Hort. Cal. p.* 344; *Gra. Cat. B. pl. p.* 108.

455. D. EMBRYOPTERIS, *(Pers.)* Gab tree. A large tree: leaves lanceolate oblong. Flowers axillary, polyandrous. Berry 8-seeded. Native of the Peninsula of India, Bengal, Silhet, &c.—*Hort. Cal. p.* 345; D. glutinosa, *Kön.*; *Roxb. fl. Ind.* II. *p.* 533; *Gra. Cat. B. pl. p.* 107.

ORDER LXII. SAPOTACEÆ, LINDL.

SAPODILLA TRIBE.

Description.—Trees or shrubs, often with milky juice, alternate, coriaceous, entire, exstipulate leaves, and hermaphrodite flowers. Calyx

4-8-parted. Corolla 4-8-cleft, somtimes with numerous segments. Stamens definite, half of them petaloid and sterile; anthers extrorse. Ovary 4-12-celled, with a single pendulous ovule in each cell; style 1. Fruit baccate. Seeds with a bony testa, usually albuminous.

Distribution.—Chiefly natives of the tropics of India, Africa and America; a few are found in the southern parts of North America, and the Cape of Good Hope. Known species 212.

Properties.—The fruit of many of the plants of this order is edible. The bark is bitter and febrifugal, some furnish caoutchouc, and others fatty matter. *Bassia butyracea* has an oily fruit which furnishes a kind of butter used in Nepal. The Shea, or Galam butter of Mungo Park, is the product of another species. *Isonandra Gutta* is the Taban-tree, which furnishes Gutta Percha.—*Balfour's Outlines of Botany, p.* 455; *Lindl*; *V. K. p.* 590.

ACHRAS, (*Linn.*) The Greek name for the wild pear.

456. A. SAPOTA, (*Linn.*) Sapota Plum or Bully tree Seemei Eloopei Marum, *Tam.*

A valuable fruit tree, native of the West Indies, is abundantly cultivated throughout all the hot parts of South America, for the sake of its fruit. Not uncommon in our gardens. Flowers smallish, white. The wood is hard and close grained. The seeds are aperient and diuretic, but dangerous if taken in over doses. The bark is a good substitute for cinchona.—*Roxb. fl. Ind.* II, *p.* 189; *Hort. Cal. p.* 339; *Gra. Cat. B. pl. p.* 105.

MIMUSOPS, (*Linn.*) From *mimo*, an ape, and *ops*, the face; the flowers may be fancied to resemble the face of a monkey.

457. M. ELENGI, (*Linn.*) Ape-face flower. The Mograh. Maghadam marum, *Tam.* Pogada maunoo, *Tel.* Bacŭla, *Beng.* Bacul mulsani, *Hind.*

Remarks.—A highly ornamental tree, with dark green, oblong, alternate leaves, and yellowish white fragrant flowers; from which a medicinal oil is obtained. The flowers are also used in making garlands and other female ornaments. "Krishna is said to have fascinated the milk maids of Brindabun by playing on a celebrated flute under a *Bacŭla* tree on the banks of the Jumna, which is, therefore, invariably alluded to in all the Sanscrit and vernacular poems relating to his amours with those young women."—*Roxb. fl. Ind.* II, *p.* 236; *Wight's Icon. fig.* 1586; *Hort. Cal. p.* 341; *Gra. Cat. B. pl. p.* 106.

BASSIA, (*Linn.*) In honour of Ferdinando Bassi, curator of the Botanic Gardens at Bologna.

458. B. LONGIFOLIA, (*Linn.*) Wild-Sapota tree. Illoopei, *Tam.* Ippa, *Tel.* Mohr, *Hind.*

88 ; *Hort. Cal. p.* 549 ; *Gra. Cat. B. pl. p.* 110 ; *Wight's Icon. fig.* 704.

466. J. LATIFOLIUM, (*Roxb.*) Broad leaved Jasmine. A tall, climbing shrub, with broad heart-shaped leaves, and white flowers in terminal corymbs. Common in gardens.—*Roxb. fl. Ind.* I, *p.* 95 ; *Gra. Cat. B. pl. p.* 110 ; *Hort. Cal. p.* 550.

467. J. TRINERVE, (*Vahl.*) Three-nerved Jasmine. A climbing shrub, leaves 3 nerved, polished ; flowers terminal and axillary, white, fragrant. Native of Java.—*Gra. Cat. B. pl. p.* 110 ; *Hort. Cal. p.* 550.

468. J. ANGUSTIFOLIUM, (*Vahl.*) Narrow leaved Jasmine. A twining shrub ; leaves shining, polished, deep green ; flowers terminal, white, slightly tinged with red, fragrant. Native of the Coromandel forests.—*Roxb. fl. Ind.* I, *p.* 96 ; *Gra. Cat. B. pl. p.* 110 ; *Hort. Cal. p.* 551.

469. J. GLAUCUM, (*Ait.*) Shining leaved Jasmine. A very beautiful, scandent shrub, with lanceolate, shining leaves. Flowers terminal, white, tinged with red.—*Gra. Cat. B. pl. p.* 111.

470. J. LEGUSTRIFOLIUM, (*Wall.*) Privet-leaved Jasmine. A large, scandent shrub ; flowers white, fragrant. Native of the Khassya Mountains.—*Hort. Cal. p.* 551.

471. J. ODORATISSIMUM, (*Linn.*) Yellow Jasmine. An elegant looking, scandent shrub, with small shining, ternate and pinnate leaves. Flowers terminal, yellow, and, like most of the family, sweet-scented ; but by no means so much so, as to merit the trivial name of Odoratissimum. Native of Madeira.—*Gra. Cat. B. pl. p.* 111. ; *Hort. Cal. p.* 552.

472. J. OFFICINALE, (*Linn.*) Common Jasmine.

" The Jessamine, with which the Queen of flowers,
To charm her god* adorns his favorite bowers ;
Which brides, by the plain hand of neatness dressed —
Unenvied rival !—wear upon their breast ;
Sweet as the incense of the morn, and chaste
As the pure zone which circles Dian's waist.

Churchill.

---

* Zephyrus

473. J. GRANDIFLORUM, (*Linn.*) Catalonian or Spanish Jasmine. Common in gardens all over India. Flower large, white, peculiarly fragrant; from the flowers of this and the former species, the genuine essential oil of Jasmine of the shops is obtained, but a similar perfume is also procured from Jasminum sambac.—*Roxb. fl. Ind.* I, *p.* 100; *Wight's Icon. fig.* 1257; *Hort. Cal. p.* 552; *Gra. Cat. B. pl. p.* 111.

474. J. HETEROPHYLLUM, (*Roxb.*) Various-leaved Jasmine. Arboreous, leaves alternate, petioled, simple or ternate, from oblong to broad ovate, acuminate, waved, lucid. Flowers yellow, delightfully fragrant. Introduced from the Calcutta Botanic gardens 1858. Native of Nepaul.—*Roxb. fl. Ind.* I, *p.* 100; *ed. Cary,* I, *p.* 164; *Hort. Cal. p.* 552.

NYCTANTHES, (*Linn.*) From *nux, nuctos,* night, and *anthos,* a flower; the flowers expand at night and fall off at the break of day; whence *arbor-tristis,* the name of the species.

475. N. ARBOR-TRISTIS, (*Linn.*) Night flowering Jasmine. Pavazha-mallie, *Tam.*

A very common, ornamental shrub, branches 4 square; leaves scabrous, deciduous in the cold season; used for polishing wood. Flowers white, with the tube orange, exquisitely fragrant, opening at sunset, and falling off at sunrise. The orange tubes of the flowers dye a most beautiful buff or orange colour.—*Roxb. fl. Ind.* I, *p.* 86; *Hort. Cal. p.* 552; *Gra. Cat. B. pl. p.* 111.

ORDER LXV. OLEACEÆ, LINDL.

OLIVE TRIBE.

Description.—Trees or shrubs, with opposite, simple, or pinnate leaves. Calyx persistent, sometimes wanting. Corolla 4-cleft, sometimes of 4 petals connected in pairs, sometimes wanting. Stamens usually 2. Ovary 2-celled. Ovules 2, pendulous in each cell. Fruit fleshy or dry, often 1-seeded by abortion, seeds albuminous; embryo straight.

Distribution.—Natives chiefly of temperate climates.

Properties.—Some of the plants of the order have emollient and laxative properties; others are bitter, tonic, and febrifugal. Some supply oil, others manna.—*Balfour's Outlines of Botany, p.* 456; *Lindl. V. K. p.* 616.

Chionanthus, (*Linn.*) From *chion*, white or snow, and *anthos*, a flower; the flowers are pure white.

476. C. dichotoma, (*Roxb.*) A small tree, branches dichotomous; leaves cuneiform-lanceolar, curved, entire. Racemes axillary; pedicels three-flowered. Flowers small, white. Native of Coromandel.—*Roxb. fl. Ind. ed. Cary*, I. *p.* 107.

Noronhia, (*Thouars.*) In honour of C. Noronha, a traveller in Madagascar.

477. N. emarginata, (*Poir.*) Emarginate leaved Noronhia. A highly ornamental, small tree; flowers small, yellow; fruit size of a walnut, edible. Native of Madagascar.—*Hort. Cal. p.* 548.

Olea, (*Linn.*) From *elaia*, the greek name of the olive. The emblem of peace.

> " Peace o'er the world her *olive* wand extend,
> And white rob'd Innocence from Heaven descend."
>
> *Pope's Messiah.*

478. O. sativa, (*Hoffm.*) Cultivated Olive. From the *pericarp* of the fruit, the well known olive oil of commerce is expressed. Does not flower at Madras. Native of Aleppo, and Lebanon, and cultivated in Spain, Italy, France, &c.

Chondrospermum, (*Wall.*) So named from *chondros*, a lump; and *sperma*, a seed.

479. C. dentatum, (*Wall.*) A shrub, scandent, branches four cornered. Leaves opposite, oval, acuminate, 3-nerved, glaucous. Introduced from the Calcutta Botanic gardens 1858.

Order LXVI. SALVADORACEÆ, Lindl.

Salvadora Tribe.

Description.—Small trees or shrubs, with opposite leaves and minute panicled flowers. Calyx of 4 minute sepals. Corolla 4-partite. Stamens 4. Ovary superior. Fruit baccate, 1-celled. Seed solitary, exalbuminous.

Distribution.—Natives of Syria and India.

Properties.—The plants are acrid and stimulant, and some of them have properties like mustard. *Salvadora persica* appears to be the Mustard plant of Scripture.—*Balfour's Outlines of Botany, p.* 456 ; *Lindl. V. K. p.* 652.

MONETIA, (*L'Heritier.*) In honour of Monet de la Marck, a famous French botanist.

480. M. TETRACANTHA, (*G. Don.*) A rambling shrub with opposite leaves ; from the axils of each of which spring two long prickles ; flowers small, axillary, yellow. Native of Africa, Peninsula of India, and Bengal—*Hort. Cal. p.* 348 ; M. barlerioides. *L'Herit.* ; *Roxb. fl. Ind.* III, *p.* 765 ; Azima tetracantha, *Lam.* ; *Wight's Illustr. fig.* 154.

ORDER LXVII. ASCLEPIADACEÆ, LINDL.

MILKWEED TRIBE.

Description.—Lactescent, often twining, shrubs or herbs, having entire, usually opposite leaves, wtih interpetiolar stipulary cilia. Calyx 5-divided. Corolla 5-lobed, æstivation imbricate, rarely valvate. Stamens 5 ; filaments usually connate ; pollen in wax-like masses, cohering in pairs and attached to glands at the five angles of the stigma, which is common to the two styles. Fruit consisting of two follicles, containing numerous comose seeds, with thin albumen.

Distribution.—Chiefly tropical plants, found in Africa, India, and America. Known species 930.

Properties.—They have acrid, stimulating, purgative, diaphoretic, and emetic properties, most of the species yield milky juice containing caoutchouc. *Asclepias tuberosa*, the Butterfly-weed or Pleurisy-root, is employed medicinally in North America as a laxative and diaphoretic. *Gymnema lactiferum*, Cowplant of Ceylon, or Kiriaghuna plant, yields a milk of which the Cinghalese make use for food ; its leaves are also used when boiled. (*Lindl.*)—*Balfour's Outline's of Botany, p.* 457 ; *Lindl.* V. *K. p.* 623.

CRYPTOSTEGIA, (*R. Brown.*) From *kryptos*, concealed, and *stege*, a covering ; referring to the corona being concealed within the tube of the corolla.

481. C. GRANDIFLORA, (*R. Br.*) Large flowered Cryptostegia.

Remarks.—This is a large twining shrub, with large, showy, rose-coloured, bell-shaped flowers. This plant yields a fine strong fibre resembling flax, and which may be spun into the finest yarn. The milky juice has long been known to contain caoutchouc, which is often prepared for rubbing out pencil marks, but it has not been as yet collected as an article of commerce. Common in hedges about Madras, and not unfrequently as an ornamental shrub in gardens.—*Wight's Icon. fig.* 832 ;

STEPHANOTIS, (*Thouars.*) So named from *stephanos*, a crown, and *ototis* eared, from the auricles of the staminal crown.

488. S. FLORIBUNDA, (*Thou.*) Showy Stephanotis. A beautiful, twining shrub, leaves elliptic, retuse; flowers numerous, umbellate, pure white, very fragrant. Native of Madagascar.

HOYA, (*R. Brown.*) In honour of the late Thomas Hoy, F. L. S. gardener to the Duke of Northumberland, at Sion House; he died in 1821.

489. H. CARNOSA, (*R. Br.*) Flesh-coloured Wax-flower plant. A twining shrub, common in gardens. The large umbels of curious wax-like flowers are very beautiful. Native of China. —*Hort. Cal. p.* 536; *Gra. Cat. B. pl. p.* 118.

490. H. IMPERIALIS, (*Lindl.*) Imperial Wax-flower plant. A twining shrub, leaves obovate, lanceolate, flowers in umbels, large, brown with a pink centre. Native of Borneo.

491. H. VIRIDIFLORA, (*R. Br.*) Green-flowered Hoya. A large, scandent shrub; readily distinguished by its drooping umbels of green flowers, the follicles are 3 or 4 inches long and as many in circumference, at the thickest part; covered with a brown mealy substance, which the Bombay cow-keepers give to their cattle as medicine.—*Gra. Cat. B. pl. p.* 119; *Hort. Cal. p.* 537; *Wight's Icon. fig.* 586; Asclepias viridiflora, *Roxb. fl. Ind.* II, *p.* 36.

492. H. PENDULA? (*W. and A.*) Pendulous Wax-flower plant.

493. H. PARASITICA? (*W. and A.*) Parasitic Wax-flower plant.

CEROPEGIA, (*Linn.*) From *keros*, wax, and *pege*, a fountain; literally a fountain of wax.

494. C. JUNCEA, (*Roxb.*) A twining plant, leaves very small, sessile, lanceolate; flowers large, greenish-yellow, and elegantly

variegated with purple; a widely distributed plant on the plains of India. The plant being succulent, and possessing an agreeable acid taste, is much eaten by the natives as a sort of salad.—*Hort. Cal. p.* 534; *Gra. Cat. B. p.* 117; *Wight's Icon. fig.* 1200.

CARALLUMA, (*R. Brown.*) Said by Loudon to be the Indian name; but this seems doubtful.—*J. Grah.*

495. C. ADSCENDENS, (*R. Br.*) Monkey's horn. An erect, fleshy plant, with angular stems, and something of the habit of a diminutive *cactus.* It is eaten as a vegetable by the natives; common in dry places in the neighbourhood of Madras.—*Gra. Cat. B. pl. p.* 118; *Hort. Cal. p.* 535.

BOUCEROSIA, (*R. Brown.*)

496. B. UMBELLATA, (*W. and A.*) Umbelled Boucerosia. A fleshy plant similar in habit to the former; flowers fœtid, externally whitish, with dark purple confluent spots, internally yellowish, with dark purple centre. Native of the southern parts of the peninsula of India.—*Wight's Icon. fig.* 495; *Hort. Cal. p.* 536; Caralluma umbellata, *Haw.*; Stapelia umbellata, *Roxb.*

ORDER LXVIII. APOCYNACEÆ, LINDL.

DOGBANE TRIBE.

Description.—Trees or shrubs, usually milky, allied to the Asclepiadaceæ, and differing from them in the contorted æstivation of the corolla, distinct filaments, granular pollen, and a peculiar hourglass-like stigma.

Distribution.—Natives of the tropics of Asia, America, and Africa. Known species 570.

Properties.—Many of the plants are poisonous, some are drastic purgatives. The bark is sometimes tonic and febrifugal. The milky juice of several species supplies caoutchouc.—*Balfour's Outlines of Botany, p.* 457; *Lindl. V. K. p.* 599.

ALLAMANDA, (*Willd.*) Named in memory of Dr. Frederic Allamand, Professor at Leyden.

497. A. CATHARTICA, (*Linn.*) A scandent, milky shrub, with large yellow flowers, which come out in succession all the year. This shrub was introduced from Guiana into India in

1803, and is now very common in gardens.—*Hort. Cal. p.* 528; A. Aubletii, *Pohl.; Gra. Cat. B. pl. p.* 116.

498. A. SCHOTTII. (*Pohl.*) Schott's Allamanda. A shrub; flowers large, yellow; native of the Brazils.

ARDUINA, (*Linn.*) Named in honour of Pietro Arduini, curator of the economical garden of Padua.

499. A. BISPINOSA, (*Linn.*) Natal Plum. A small shrub, leaves oblong, flowers white. Native of South Africa.—*Hort. Cal. p.* 530.

CARISSA, (*Linn.*) Derivation not known.

500. C. CARANDAS, (*Linn.*) Carissa Bush. Kalaka, *Tam.* Wakay, *Tel.* Kurunda, *Hind.* Kurumchee, *Beng.*

Remarks.—A common, thorny shrub; makes, on account of its strong sharp thorns, very-good fences. The berries scarcely ripe, are employed to make tarts, preserves, and pickles. The ripe fruit are universally eaten by the natives and are pleasant tasted. Flowers middle-sized, pure white. Common in jungles and uncultivated places.—*Roxb. fl. Ind. p.* 687; *Wight's Icon. fig.* 426; *Gra. Cat. B. pl. p.* 116; *Hort. Cal. p.* 529.

RAUWOLFIA, (*Linn.*) In honour of Leonhard Rauwolf, M. D., a botanical traveller.

501. R. CANESCENS, (*Linn.*) Hoary Rauwolfia. A shrub, leaves 4 together, oblong ovate, acuminate, pubescent; flowers terminal and axillary, small, white. Native of Jamaica.

OPHIOXYLON. (*Burmann.*) From *ophis*, a serpent, and *xylon*, wood; alluding to the tortuous root and stems.

502 O. SERPENTINUM, (*Linn*). Chivan-amelpodi, *Tam.* Patal-ganni, *Tel.* Chota-chand, *Hind.* Chandra, *Beng.*

Remarks.—A small, shrubby plant, stem woody, erect, climbing or twining; leaves 3-4-5 in a whorl: flowers small, white, with the tube pale rose lilac, the calyx red; and the fruit shining black. The root is used internally in various disorders. It is recknoned febrifuge: and is administered internally in cases of snake-bite and stings from scorpions, the dose being a pint of the decoction every 24 hours; the powder being also applied to the parts. Native of the Moluccas, Java, Cochin China, Ceylon, Peninsula of India, &c. &.—*Roxb. fl. Ind.* I, *p.* 694; *Wight's Icon. fig.* 849; *Gra. Cat. B. pl. p.* 116; *Hort. Cal. p.* 532.

THEVETIA, (*Juss.*)

503. T. NERIIFOLIA, (*Juss.*) The Exile. A large shrub, with oleander-looking leaves, and pretty, bell-shaped, yellow flowers; fruit size of a crab apple, which are eaten by some birds. Native of New Granada, Mexico, Cuba, &c. Domesticated in India.—*Hort. Cal. p.* 531; Cerbera Thevetia, *Linn.*; *Gra. Cat. B. pl. p.* 116.

CALPICARPUM, (*G. Don.*) From *calpis*, an urn, and *karpos*, fruit; alluding to the shape of the fruit.

504. C. ROXBURGHII, (*G. Don*). A shrub: leaves opposite, remote, oblong to lanceolate, glabrous, acuminated: corymbs terminal; flowers large, pale rose, at the base and throat bright red. Native of Pegu.—*Wight's Icon. fig.* 431; *Hort. Cal. p.* 531; Cerbera fruticosa, *Roxb. fl. Ind.* I, *p.* 691.

CERBERA, (*Linn.*) Named from its poisonous qualities, in allusion to the dog Cerberus, whose bite was poisonous.

505. C. ODALLUM, (*Gœrtn.*) Odallum tree. A tree, leaves lanceolate, approximate, shining: corymbs terminal: calycine segments linear, revolute: segments of corolla sub-falcate. (*G. Don.*) Flowers white, fragrant. Native of salt swamps on the coast of Malabar and S. Concan. Common on the Maldive and Laccadive Isles.—*Roxb. fl. Ind.* I, *p.* 692; *Wight's Icon. fig.* 441; *Gra. Cat. B. pl. p.* 116; *Hort. Cal. p.* 531.

TABERNÆMONTANA, (*Linn.*) In honour of James Theodore Tabernæmontanus, a celebrated physician and botanist.

506. T. CORONARIA, (*R. Br.*) Wax-flower plant. Nundiavuttei, *Tam.* Firkitargar; Phirki-tugury *Hind. Beng.* A very common shrub in gardens; flowers generally double, pure white, fragrant during the night.—*Roxb. fl. Ind.* II, 23; *Gra. Cat. B. pl. p.* 115; *Wight's Icon. fig.* 477, *Hort. Cal. p.* 527.

507. T. PARVIFLORA, (*Roxb.*) A shrub, flowers small, white. Native of Sumatra.—*Roxb. fl. Ind.* II, *p.* 25; T. micrantha, *Voigt.*; *Hort. Cal. p.* 527.

ROUPELLIA, (*Wall.*) In honour of Charles Roupell of S. Carolina.

508. R. GRATA, (*Wall.*) Grateful Roupellia. A shrub, with large oblong leaves, and beautiful large, white flowers, tinged with rose colour, slightly fragrant. This plant produces what is called the Cream-fruit. Native of Sierra Leone.

VINCA, (*Linn.*) Probably from *vinculum*, a band; in allusion to the suitableness of the shoots for making bands.

509. V. ROSEA, (*Linn.*) Madagascar Periwinkle. Choodoo-kat-mallie, *Tam.* A small perennial, common in gardens, flowers large, rose coloured; in flower throughout the year. Native of China, Cochin China, &c.—*Roxb. fl. Ind.* II, *p.* 1, *Hort. Cal. p.* 526; Catharanthus roseus, *Don; Gra. Cat. B. pl. p.* 115.

510. V. β. ALBIFLORA. White flowered variety.—*Hort. Cal. p.* 526.

PLUMIERIA, (*Linn.*) In honour of C. Plumier, a celebrated French botanist.

511. P. ACUMINATA, (*Ait.*) Pagoda tree. Kuppa-alarie, *Tam.* A small elegant tree, common; flowers white and yellow, tinged with red; delightfully fragrant, especially during the night.—*Roxb. fl. Ind.* II, *p.* 20; *Gra. Cat. B. pl. p.* 115; *Hort. Cal. p.* 528; *Wight's Icon. fig.* 471.

512. P. ALBA, (*Jacq.*) White flowered Plumieria. A small tree, flowers large, white, with a yellowish tube and throat, very fragrant. Native of the West Indies. S. America.—*Hort. Cal. p.* 528.

VALLARIS, (*R. Brown.*) From *vallo*, to enclose; used for fences in Java.

513. V. DICHOTOMA, (*Wall.*) Fragrant Vallaris. A large, scandent shrub, leaves lanceolate-oblong; racemes axillary; flowers middle-sized, white, fragrant. Native of Bengal, Silhet,

Nepal, &c.—*Hort. Cal. p.* 524 ; *Wight's Icon. fig.* 438 ; Echites dichotoma, *Roxb. fl. Ind.* II. *p.* 19 ; *Gra. Cat. B. pl. p.* 113.

BEAUMONTIA, (*Wall.*) In memory of Diana, the lady of Colonel L. Beaumont, of Bretton Hall.

514. B. GRANDIFLORA, (*Wall.*) Large-flowered Beaumontia. A gigantic climbing shrub, ascending to the top of the highest trees ; flowers large, white, trumpet-shaped. Native of Chittagong, Khassya mountains, Nepal, &c.—*Gra. Cat. B. pl. p.* 113 ; *Hort. Cal. p.* 524 ; Echites grandiflora, *Roxb. fl. Ind.* II. *p.* 14.

515. B. JERDONIANA, (*R. W.*) Western Ghaut climber. A large, climbing shrub, somewhat similar to the above species. Coorg jungles.—*Wight's Icon. fig.* 1314.

WRIGHTIA, (*R. Brown.*) After the late William Wright, M.D., F. R. S., L. and E., F. L. S., a Scotch physician and botanist, resident in Jamaica.

516. W. ANTIDYSENTERICA, (*R. Br.*) Astringent Wrightia. Vepallei, *Tam.* Codaga-pala, *Tel.* A small tree, flowers large, pure white. The ghauts and hilly parts of the Concan.—*Hort. Cal. p.* 525 ; *Gra. Cat. B. pl. p.* 114.

517. W. MOLLISSIMA. (*Wall.*) Soft-leaved Wrightia. A small tree, flowers largish, yellowish, tinged with red. Deyra-Dhoon. Kemaon. Naggary jungles.— *Hort. Cal. p.* 526.

STROPHANTHUS, (*Desvaux.*) From *strophos*, a twisted thong, and *anthos*, a flower ; the segments of the corolla are long, narrow, and twisted.

518. S. CHINENSIS ? A shrub, flowers brownish yellow.

NERIUM, (*Linn.*) From *neros*, humid ; alluding to the habitate of the plants.

519. N. ODORUM, (*Ait.*) Sweet-scented Oleander. Alarie, *Tam.* Common in gardens ; flowers, large, sweet-scented.—

Roxb. fl. Ind. II, *p.* 2 ; *Hort. Cal. p.* 524 ; *Gra. Cal. B. pl. p.* 114 ; N. Odoratum, *Lam.* ; N. Indicum, *Mill.* ; N. Oleander, *Lour.*

520. N. β. ALBO-SIMPLEX. White flowered variety.—*Hort. Cal. p.* 524.

521. N. γ. PLENUM. Double-flowered variety.—*Hort. Cal. p.* 525.

ICHNOCARPUS, (*R. Br.*) From *ichnos*, a vestige, and *karpos*, fruit.

522. I. FRUTESCENS, (*R. Br.*) A twining shrub, flowers greenish white, sweet-scented. Native of most parts of India.—*Hort. Cal. p.* 532 ; *Gra. Cat. B. pl. p.* 113 ; *Wight's Icon. fig.* 430 ; Echites frutescens, *Roxb. fl. Ind.* II. *p.* 12 ; Apocynum frutescens. *Linn.*

ECHITES. (*Linn.*) From *echis*, a viper ; referring to the smooth twining shoots.

523. E. PANICULATA, (*Roxb.*) Panicled Echites. A large, climbing shrub, flowers small, cream coloured, fragrant. Native of Silhet.—*Roxb. fl. Ind.* II. 17 ; *Wight's Icon. fig.* 396 ; *Hort. Cal. p.* 523.

524. E. SUB-ERECTA. A climbing shrub, with beautiful large, bright yellow flowers. Native of Jamaica.

ORDER LXIX. LOGANIACEÆ, LINDL.

STRYCHNOS TRIBE.

Description.—Shrubs, herbs, or trees, with opposite, entire, stipulate, leaves. Calyx inferior, 4-5-parted. Corolla 4, 5, or 10-cleft ; æstivation convolute or valvate. Stamens varying in number, not always isomerous with the corolla. Fruit a 2-celled capsule with loose placentas, or a berry, or succulent, with 1 or 2 nucules. Seeds usually peltate, albuminous.

Distribution.—Chiefly tropical plants. Known species 200.

Properties.—The plants of this order are highly poisonous. They produce tetanic convulsions and narcotism : some of them are used medicinally as active remedies in certain kinds of palsy : intense bitterness is met with in some of the species, and in very minute doses they act as tonics. *Ignatia amara*, St. Ignatius's Bean, produces convulsions and death.—*Balfour's Outlines of Botany, p.* 457 ; *Lindl. V. K. p.* 602.

STRYCHNOS, (*Linn.*) The Greek name of the *Solanum.*

525. S. NUX-VOMICA, (*Linn.*) Poison nut-tree. Yettie-marum, *Tam.* Moostighanga, Musadi, *Tel.* Koochla, *Hind. Beng.*

Tree, middling size : leaves opposite, smooth, shining, 3-5 nerved, oval : calyx 5 parted : corolla ovate, tubular, funnel-shaped : flowers small, greenish-white, collected into terminal corymbs : berry round, smooth, size of a small apple, orange coloured, when ripe, many seeded, pulpy.

Remarks.—The wood of this tree being hard and durable is used for many purposes. It is exceedingly bitter, particularly the root, which is used in the cure of intermittent fevers, and the bites of venomous snakes. The seeds are employed in the distillation of country spirits, to render them more intoxicating. The pulp of the fruit seems perfectly innocent, as it is greedily eaten by many sorts of birds—*Roxb.* The seeds are extrembly poisonous, in large doses producing extraordinary rigidity and convulsive contraction of the muscles previous to death. In very small and repeated doses it promotes the appetite, assists the digestive process, increases the secretion of urine, and sometimes acts slightly on the bowels. It is employed medicinally in paralysis, dyspepsia, dysentery, affections of the nervous system, &c.—*Lindl.* This drug is well known as Nux-vomica, as possessing a dangerous narcotic property, which depends upon the presence of a peculiar principle called *strychnia.* Native of Martaban, Coromandel, and hilly parts of the Concan.—*Roxb. fl. Ind.* I, *p.* 375; *Gra. Cat. B. pl. p.* 112; *Hort. Cal. p.* 530.

FAGRÆA, (*Thunb.*) Named in honour of J. T. Fagræus, M. D.

526. F. COROMANDELIANA, (*R. W.*). A large shrub or small tree, with very large, white flowers. Courtallum and Coonoor, Neilgherries.—*Wight's Icon. fig.* 1316.

ORDER LXX. GENTIANACEÆ, LINDL.

GENTIAN TRIBE.

Description.—Herbs, rarely shrubs, with opposite, entire, exstipulate, usually ribbed leaves and showy variously-coloured flowers, calyx divided, persistent. Corolla persistent, imbricate, induplicate, often twisted in æstivation, somtimes with a fringed limb. Stamens alternate with corolline segments. Ovary of 2 carpels, placed to the right and left of the axis, one-celled, with 2 parietal, often introflexed, placentas ; style 1 ; stigmas 2. Fruit a capsule or berry. Seeds numerous, with fleshy albumen and a minute embryo.

Distribution.—Natives of all parts of the world, some are found at an elevation of 16,000 feet; others in hot tropical plains. Known species, 450.

Properties.—Bitterness is the property which prevails generally in this order. Occasionally the species have emetic and narcotic qualities. The root of *Gentiana lutea*, is used as a bitter tonic.—*Balfour's Outlines of Botany, p.* 469; *Lindl. V. K. p.* 612.

VILLARSIA, (*Vent.*) Named in honour of D. Villars, famous French botanist.

527. V. CRISTATA, (*Spreng.*) An aquatic : petioles viviparous : leaves round-cordate, repand : nectary triple ; stigma two-cleft ; flowers smallish, white, growing from the petioles. A native of pools of sweet water, where it floats, often not reaching the bottom with its roots. Common.—*Gra. Cat. B. pl. p.* 123 ; *Hort. Cal. p.* 521 ; Menyanthes cristata.—*Roxb. fl. Ind.* I, *p.* 459 ; *ed Carey*, II, *p.* 29.

ORDER LXXI. BIGNONIACEÆ, R. BROWN.

TRUMPET-FLOWER TRIBE.

Description.—Trees or twining or climbing shrubby plants, with exstipulate, usually opposite and compound leaves, and showy often trumpet-shaped flowers. Their woody stem is sometimes divided in a cruciform manner. Calyx entire or divided, often spathaceous. Corolla with a swollen throat, and a more or less irregular 4-5 lobed limb. Stamens 5, unequal, one generally abortive ; sometimes didynamous, ovary surrounded by a disk, 2-celled; carpels anterior and posterior ; placentas in the axis. Fruit a 2-valved, often pod-like capsule, divided by a spurious placental dissepiment. Seeds winged, exalbuminous ; embroyo with broad leafy cotyledons.

Distribution.—The tropics of either hemisphere are the chief stations of this noble looking order, whose trumpet-shaped flowers are the glory of the places which the species inhabit. Known species 450.

Properties.—The species are best known for the great beauty of the flowers, which from their large size, gay colours, and great abundance, are often the most striking objects in a tropical forest.—*Balfour's Outlines of Botany, p.* 459 ; *Lindl. V. K. p.* 675.

BIGNONIA, (*Linn.*) In memory of Abbé Bignon, librarian to Louis XIV.

528. B. SUBEROSA, (*Roxb.*) Indian Cork tree. A tree, with deeply cracked, spongy bark ; leaves supra-decompound ; flowers in large, cross armed, terminal panicles ; pure white, and very fragrant. This handsome tree is well adapted for planting in compounds.—*Gra. Cat. B. pl. p.* 126 ; *Roxb. fl. Ind.* III, *p.* 111. *Hort. Cal. p.* 476.

529. B. VENUSTA, (*Ker.*) Lovely Bignonia. An elegant climbing plant, with large, orange coloured flowers. Native of South America.

530. B. GRACILIS, (*B. Cab.*) Slender Bignonia. A very beautiful climbing plant, ascending to the tops of the highest trees. Flowers large, yellow. Native of South America.

531. B. CHAMBERLAYNII. A climbing plant, well adapted for trellis work. Flowers pale yellow. Native of Brazil.

CALOSANTHES, (*Blume.*)

532. C. INDICA, (*Bl.*) A tree, flower large, outside dark purple, inside yellowish-white. Coromandel, &c.—*Hort. Cal. p.* 478.

AMPHILOPHIUM, (*Kunth.*) Derived from *amphi*, round; and *lobos*, a pod, *lophos*, a crest,—or *lophion*, a little hillock.

533. A. MUTISII, (*Kunth.*) A pretty, climbing plant, flowers dark purple, in terminal panicles. Native of Equinoctial America.—*Hort. Cal. p.* 478.

SPATHODEA, (*Beauvois.*) From *spathe*, a spatha, in reference to the form of the calyx.

534. S. ADENOPHYLLA, (*Wall.*) A small tree, leaves pinnate; flowers in terminal panicles, large, pale yellow.—*Wight's Illustr. fig.* 161.

535. S. CRISPA, (*Wall.*) A tree, leaves opposite, pinnate; leaflets with a white pellucid margin; while young, villous; flowers in May and June, in solitary terminal racemes; large, pure white, fragrant, segments of the border much corded. Capsule linear, pendulous, twisted. Native of Mysore, &c.—*Hort. Cal. p.* 477; Bignonia crispa, *Roxb. fl. Ind.* III, *p.* 103; *Gra. Cat. B. pl. p.* 125.

536. S. CAMPANULATA. A small tree, leaves unequally pinnate; racemes terminal, many flowered; flowers very large, orange scarlet.

STEREOSPERMUM, (*Chambers.*)

537. S. SUAVEOLENS, (*D. C.*) Sweet-scented Stereospermum. A large tree, leaves unequally pinnate, flowers in termi-

nal panicles, of a dull purplish colour, very fragrant. A not uncommon tree, but apparently often cultivated for the sake of its fragrant flowers.—*Wight's Icon. fig.* 1342.

538. S. CHELONOIDES, (*D. C.*) A tree; leaves unequally pinnate, 4-paired, panicles terminal; flowers fragrant, yellow. Jungles between Coimbatore, and Palghaut.—*Wight's Icon. fig.* 1341.

TECOMA, (*Juss.*) From *Tecomaxochitl*, the Mexican name of the species.

539. T. CAPENSIS, (*Lindl.*) Cape Tecoma. A stragling growing shrub; flowers large, orange scarlet. Native of the Cape of Good Hope.—*Hort. Cal. p.* 478; Bignonia Capensis, *Thunb.*

540. T. GRANDIFLORA, (*Swt.*) Large flowered Tecoma. A twining shrub; flowers large, orange-coloured. Native of Japan, and China.—*Hort. Cal. p.* 478; Bignonia Chinensis, *Lamb.*

541. T. RADICANS, (*Juss.*) Rooting or Ash-leaved Tecoma. A very beautiful climber, with pinnate leaves; leaflets gashed; stem with rooting joints; flowers in large bunches at the end of the shoots; of a scarlet orange colour. Native of N. America. —*Hort Cal. p.* 478; Bignonia radicans, *Linn.*; *Gra. Cat. B. pl. p.* 126.

542. T. JASMINOIDES, (*G. Don.*) Jasmine like Tecoma A climbing shrub; flowers large, white rose-coloured. Native of New Holland.—*Hort. Cal. p.* 477; Bignonia Jasminoides, *Cunningham.*

543. T. STANS, (*Juss.*) A tall shrub, with somewhat 4 square branches; leaves pinnate; leaflets deeply serrate: flowers large, yellow, very showy. Native of South America and the West Indies.—*Gra. Cat. B. pl. p.* 126.

All the species of Tecoma and Bignonia are remarkable for the great beauty of their flowers, and are well worthy of cultivation as ornamental plants.

ORDER LXXII. GESNERACEÆ, LINDL.

GESNERA TRIBE.

Description.—Herbs or shrubs, often growing from scaly tubers, with rugose, usually opposite, and whorled exstipulate leaves, and showy flowers. Calyx half-adherent, 5-parted. Corolla more or less irregular, 5-lobed; stamens 2, or 4, didynamous, with the rudiment of a fifth; anthers often combined. Ovary 1-celled, surrounded by a disk in the form of glands or a ring. Fruit capsular or succulent, 1-celled, with 2-lobed parietal placentas to the right and left of the axis. Seeds numerous, albuminous.

Distribution.—They are natives of various parts of the world, chiefly the warmer regions of America. Known species 275.

Properties.—The succulent fruits of some Gesnereæ are mucilaginous, sweetish and eatable; and a dye is obtained from the calyces of others, for staining cotton, straw-work, and domestic utensils.—*Balfour's Outlines of Botany, p.* 459; *Lindl. V. K, p.* 671.

ACHIMENES, (*R. Brown.*) A word of unkown meaning.

544. A LONGIFLORA,* (*D. C.*) Long-flowared Achimenes. A perennial, herbaceous plant. Flowers large, pale blue: Native of Guatemala.

545. A PICTA, (*Benth.*) Spotted Achimenes. A perennial; flowers scarlet spotted with yellow.

GLOXINIA, (*L'Herit.*) Named in honour of P. B. Gloxin, a botanist of Colmar.

546. G. SPECIOSA, (*Ker.*) A perennial, tuberous, herbaceous plant; flowers showy of a pale blue colour with a white purple dotted throat. Native of Brazil.—*Gra. Cat. B. pl. p.* 146; *Hort. Cal. p.* 495.

ORDER LXXIII. CRESCENTIACEÆ, GARDNER.

CALABASH TREE TRIBE.

Description.—Small trees, with exstipulate leaves, and flowers growing out of the old stems and branches. The plants are allied to Bignoniaceæ, from which they differ in their parietal placentas, their wingless seeds, fleshy cotyledons, and in the pulpy contents of the woody, indehiscent fruit.

Distribution.—Inhabitants of the tropics of Asia, Africa, and America, but most especially abundant in the Mauritius and Madagascar. Known species 34.

Properties.—Under the species.—*Balfour's Outlines of Botany, p.* 460; *Lindl. V. K. p.* 673.

CRESCENTIA, (*Linn.*) In memory of Pietro Crescenti, of Bologna, an agricultural author of the sixteenth century.

546 C. CUJETE, (*Linn.*) Common Calabash tree.

A small tree, leaves cuneate lanceolate, close together ; flowers large, variegated with green, purple, red, and yellow, not withering, but becoming putrid, and exhaling a nauseous and intolerable smell. Natives of equinoctial America. Shells of the fruit, cleansed and dried, are used by the inhabitants of Tropical America for drinking cups. Those of the long small-fruited kind, are formed into spoons and ladles. The round ones are cut through the middle and used for chocolate-cups ; they are frequently large enough to hold a gallon of fluid, serving to boil water in as they bear fire well. The thicker parts are frequently used for button moulds in the West Indies. The Caribs engrave the outside with a number of grotesque figures, which they sometimes colour black and red. The *pulp* is now and then eaten by the negroes, but it is not looked upon as either agreeable or wholesome ; it is, however, much used by way of poultice, and a syrup made out of it is much in request among the natives, in disorders of the breast, in contusions, and inward bruises. The wood being very tough and flexible, is fit for the coach-makers, and frequently used for making saddles, stools, and other furniture.—(*Mill. dict.*) *Hort. Cal. p.* 479.

547. C. ALATA, (*H. B. & Kth.*) A small tree ; flowers like those of Cujete. Native of Mexico.—*Hort. Cal. p.* 479.

ORDER LXXIV. PEDALIACEÆ, LINDL.

OIL SEED TRIBE.

Description.—Glandular herbs, with exstipulate leaves and large bracteated flowers. They are allied also to Bignoniaceæ, from which they differ in their parietal placentation, their wingless seeds with a papery episperm. From Crescentiaceæ they are distinguished by the want of pulp in the fruit. The ovary, at first 1-celled, sometimes becomes divided by placental septa into 4 or 6 cells.

Distribution.—The species of Pedaliads occur in all parts of the tropics, in small numbers, but Africa is supposed to be the principal field over which they are spread. Known species 25.

Properties.—The plants of the order have generally a heavy odour. Their seeds yield oil as well as starchy matter.—*Balfour's Outlines of Botany, p.* 460 ; *Lindl. V. K. p.* 669.

MARTYNIA, (*Linn.*) In honour of John Martyn, F. R. S., professor of botany at Cambridge, who died in 1768.

548. M. DIANDRA, (*Glox.*) An annual, flowers large, white, pale rose-coloured, stained with orange below on the inside, and stained on the limb above with 5 central dark purple

spots. Native of Mexico. Common about Madras.—*Hort. Cal. p.* 475 ; *Gra. Cal. B. pl. p.* 127.

PEDALIUM, *(Linn.)* From *pedalion*, a rudder ; in reference to the dilated angles of the fruit.

549. P. MUREX, *(Linn.)* Prickly Pedalium. An annual, succulent plant, with small, yellow flowers on axillary peduncles. The fresh leaves have the property of thickening water, and rendering it mucilaginous. Native of the sea shores of the Coromandel cost.—*Gra. Cat. B. pl. p.* 127 ; *Roxb. fl. Ind.* III, *p.* 114 ; *Hort. Cal. p.* 475.

SESAMUM, *(Linn.)* From *sempsen*, the Egyptian name of one of the species.

550. S. INDICUM, *(Linn.)* Gingelie oil point. Yelloo cheddie, *Tam.* Noowooloo, *Tel.* Til, *Beng.* An annual, flowers largish, white rose-coloured. Common all over India. Cultivated in Egypt, South America, W. Indies, Levant, &c. Leaves emollient. The oil known as the gingilie-oil is expressed from the *seeds*, and is one of the most valuable of Indian vegetable oils. It will keep for many years without becoming rancid either in taste or smell ; after a time it becomes so mild as to be used as a substitute for sweet-oil in salads.—*Hort. Cal. p.* 475 ; *Wight's Illustr. fig.* 163, S. orientale, *Linn* : *Roxb. fl. Ind.* III, *p.* 100 ; *Gra. Cat. B. pl. p.* 126, *Bal. Cyclop. Ind.*

551. S. PROSTRATUM, *(Retz.)* Prostrate Sesamum. An annual, found growing on sand-hills, along the sea-coast, frequent in such places near Madras towards the Adyar.—*Wight's Icon. fig.* 1346.

ORDER LXXIV. POLEMONIACEÆ. LINDL.

PHLOX TRIBE.

Description.—Herbs, with opposite or alternate leaves. Calyx 5-cleft. Corolla regular, 5-lobed convolute. Stamens 5, alternate with the corolline lobes ; pollen blue. Ovary superior, 3-celled ; style 1 ; stigma trifid. Capsule 3-celled, 3-valved, valves separating from the axis. Seeds

albuminous, often with a mucous covering containing spiral threads, which spread out into coils when water is applied.

Distribution.—Natives chiefly of the temperate parts of America. Known species 104.

Properties.—Unimportant.—*Balfour's Outlines of Botany, p.* 460; *Lindl. V. K. p.* 635.

PHLOX, (*Linn.*) From *phlox*, a flame; appearance of the flowers.

552. P. DRUMMONDI, (*Hook.*) An annual, flowers of various shades and colours. This is one of the best annuals which is grown in the Madras gardens either for pots or flower beds. Ripens seed freely, which is to be preferred to that imported. Native of Texas.

ORDER LXXV. HYDROPHYLLACEÆ, LINDL.

HYDROPHYLLUM TRIBE.

Description.—Herbs or small trees, usually with alternate and lobed, hispid leaves. Calyx 5-cleft, often with appendages, persistent. Corolla regular, somewhat bellshaped. Stamens 5, alternating with the corolline lobes. Ovary superior, with 2 parietal placentas, which often line the ovary; styles 2. Fruit a 2-valved, 1-celled, or spuriously 2-celled capsule filled with a large placenta. Seeds reticulated; embryo small in hard albumen.

Distribution.—Natives chiefly of the temperate parts of America, a few occur in the East Indies and Cape of Good Hope. Known species, 77.

Properties.—Unimportant. *Balfour's Outlines of Botany, p.* 460; *Lindl. V. K. p.* 638.

HYDROLEA, (*Linn.*) From *hydor*, water, and *elaia* oil; alluding to the situation and oily nature of the plants.

553. H. ZEYLANICA. (*Vahl.*) An annual; stems round, smooth, succulent; flowers of a bright blue color. A widely distributed plant, found in Mexico, Rio Janeiro, Java, Ceylon. Both Peninsulas of India, Bengal, &c.—*Hort. Cal. p.* 366; *Gra. Cat. B. pl. p.* 127; *Wight's Illustr. fig.* 167; Nama zeylanica, *Linn.*; *Roxb. fl. Ind.* II, *p.* 73; Steries javana, *L. Mant.*; Steris aquatica, *Burm.*

ORDER LXXVI. CONVOLVULACEÆ, R. BROWN.

BIND WEED TRIBE.

Description.—Herbs or shrubs, usually twining and lactescent, with alternate, exstipulate leaves and regular flowers, having a unifloral or

multifloral cymose inflorescence. Calyx 5-divided, imbricated, persistent. Corolla plaited. Stamens 5, alternate with the corolline lobes. Ovary free, 2-4-celled ; ovules 1-2 in each cell, erect ; styles united, often divided at the apex. Capsule 2-4-celled, sometimes by abortion 1-celled, septifragal. Seeds large, with mucilaginous albumen ; embryo curved with crumpled cotyledons.

Distribution.—Very abundant in all parts of the Tropics, but rare in cold climates where only a few are found ; they twine round other shrubs or creep among the weeds of the sea-shore. Known species, 665.

Properties.—This order is characterized by purgative properties, and contains some important medicinal plants. *Convolvulus Scammonia,* is the source of the purgative gum-resin, Scammony. *Exogonium* (*Ipomæa*) *Purga* is the plant which yields Jalap.—*Balfour's Outlines of Botany, p.* 461 ; *Lindl. V. K. p.* 630.

EVOLVULUS, (*Linn.*) From *evolvo,* to roll out, not twining ; opposite to *convolvulus.*

554. E. ALSINOIDES, (*Linn.*) Chickweed leaved Evolvulus. A pretty, herbaceous, creeping plant, with small deep bright blue flowers. Very common, throughout India, it is also found in New Holland.—*Hort. Cal. p.* 363 ; E. hirsutus, *Lam. ; Gra. Cat. B. pl. p.* 133.

PORANA, (*Burm.*) So named from *poreno,* to journey ; branches extending to a great distance.

555. P. VOLUBILIS, (*Linn.*) Twining Porana. Shrubby, twining. Leaves cordate, entire, smooth. Panicles axillary, and terminal. Flowers numerous, small, white. Native of Bengal. —*Roxb. fl. Ind.* I. *p.* 465 ; *ed. Cary,* II. *p.* 40 ; *Wihgt's Icon. fig.* 347 ; *Hort. Cal. p.* 363.

HEWITTIA, (*W. & A.*)

556. H. BICOLOR, (*W. & A.*) Perennial, twining, hairy ; leaves alternate, broad, cordate ; flowers pale yellow, with a dark purple eye. Native of both Peninsulas of India, common near the coast.—*Wight's Icon. fig.* 835 ; *Hort. Cal. p.* 363 ; Shuteria bicolor, *Choisy ; Gra. Cat. B. pl. p.* 133 ; Convolvulus bicolor, *Vahl. ; Roxb. fl. Ind.* I. *p.* 475 ; *ed. Cary,* II. *p.* 57.

CONVOLVULUS, (*Linn.*) Derived from the Latin *convolvere,* to entwine or wind about ; in reference to the habit of the plants.

557. C. PARVIFLORA, (*Vahl.*) Small flowered Convolvulus. An annual, twining, leaves cordate, flowers small, white. Native of Java, Timor, and both Peninsulas of India.—*Roxb. fl. Ind.* I. *p.* 471; *ed. Cary*, II. *p.* 51; *Hort. Cal. p.* 362.

JACQUEMONTIA, (*Choisy.*) Named after Victor Jacquemont, who travelled in the East Indies, as a Natural Historian.

558. J. VIOLACEA. A beautiful twining plant, leaves cordate; peduncles longer than the leaves, many flowered. Flowers bright blue; in flower throughout the year. Native of the East Indies.

CALONYCTION, (*Choisy.*) From *kalos*, beautiful, and *nyx*, night; in allusion to the large showy flowers, expanding at night.

559. C. ROXBURGHII, (*G. Don.*) Moon-flower creeper. A large twining plant; stems sometimes armed with inoffensive prickles; leaves cordate, petioled, pointed; flowers very large, pure white, fragrant. Native of both Peninsulas of India, Bengal, Assam, Nepal, &c.—*Gra. Cat. B. pl. p.* 130; *Hort. Cal. p.* 355; Ipomœa grandiflora, *Roxb. fl. Ind.* I. *p.* 497; *ed. Cary*, II. *p.* 37.

IPOMŒA, (*Linn.*) So named from *ips*, bindweed, and *homoios*, similar; alluding to the twining habit of the plants.

A.—Stems creeping.

560. I. REPTANS, (*Poir.*) Vellay-keeray, *Tam.* An annual, creeping; stems rooting; leaves sagittate, lanceolate; flowers large, pale rose-colored, with a dark purple eye. The tender tops and leaves are much esteemed and eaten by the natives of all ranks; found about the borders of tanks and moist places. Native of Coromandel, the Concans, Moluccas, China, Arabia, Bengal, &c.—*Gra. Cat. B. pl. p.* 130; *Hort. Cal. p.* 355; Convolvulus reptans, *Linn.*; C. repens, *Vahl.*; *Willd.*; *Roxb. fl. Ind.* I. *p.* 482; *ed. Cary*, II. *p.* 68.

561. I. PES CAPRÆ, (*Sweet.*) Goat's-foot creeper.

Perennial, creeping: stems rooting; leaves smooth, long petioled, two lobed like those of the Bauhinia; flowers large, purplish rose-coloured. Very useful on the sandy beaches, where it grows, in helping to bind the loose soil, and in time rendering it sufficiently stable to bear grass. Goats, horses and rabbits eat it. (*Roxb.*) The natives boil the leaves and apply them externally as an anodyne in cases of colic. This plant encircles the globe, being found in China, Sandwich Islands, New Holland, S. America, Bourbon, Arabia, Mauritius, Ceylon, Moluccas. Both Peninsulas of India, Soonderbuns.—*Gra. Cat. B. pl. p.* 130; *Hort. Cal.* 356; I. maritima, *R. Br.*; *B. Reg.* 4, t. 319; I. orbicularis, *Ell.*; I. carnosa, *R. Br.*; I. Brasiliensis, *Meyer.*; I. biloba, *Forsk.*; Convolvulus pes capræ, *Linn.*; *Roxb. fl. Ind.* I. *p.* 436; *ed. Cary,* II. *p.* 74; C. maritima, *Desrouss*; C. bilobatus, *Roxb. fl. Ind.* I. *p.* 485; *ed. Cary,* II. *p.* 73; C. bauhiniæfolius; *Salisb.*

562. I. RUGOSA, (*Choisy.*) Stems creeping, perennial; leaves reniform; peduncles, axillary, solitary; flowers usually pink, sometimes pure white. Frequent in moist soil as about the banks of water courses, and under the bunds of tanks.—*Gra. Cat. B. pl. p.* 131; *Wight's Icon. fig.* 887; I. repens, *Lam.*; *Hort. Cal. p.* 357; Convolvulus flagelliformis, *Roxb. fl. Ind.* I. *p.* 481; *ed. Cary,* II. *p.* 67.

563. I. GANGETICUS, (*Voigt.*) Perennial, creeping, smooth; leaves long petioled; reniform, emarginate; peduncles many flowered; flowers small, yellow. The leaves are used as greens mixed with tamarind. Common during the cold months.—*Hort. Cal. p.* 356; I. reniformis, *Choisy.*; *Gra. Cat. B. pl. p.* 131; Convolvulus reniformis, *Roxb. fl. Ind.* I. *p.* 481; *ed. Cary,* II. *p.* 67; C. Gangeticus, *Linn.*; Evolvulus emarginatus. *Burm*

B.—Stems erect or difuse, not twining.

564. I. FILIFORMIS, (*Voigt.*) An annual or biennial; leave linear lanceolate, stem clasping; flowers straw colored, more yellow at the plaits, with a crimson eye. Common. Native of China, Japan, New Holland, America, C. G. H.—Guinea, Ceylon, Java. Both Peninsulas of India, Bengal.—*Hort. Cal. p.* 356; I, filicaulis, *Blume.*; *Gra. Cat. B. pl. p.* 131; Convolvulus filicaulis, *Vahl.*; C. hastatus, *Desrouss*; C. simplex, *Pers.* C. medium, *Lour.*; *Roxb. fl. Ind.* I. *p.* 474; *ed. Cary,* II. *p.* 56; C.

filiformis, *Thumb*: ; C. denticulatus, *Desrouss*; Ipomœa denticulata, *R. Br.* ; I. angustifolia, *Jacq.*

C.—Stems twining.

565. I. HISPIDA, (*Voigt.*) An annual, twining plant ; leaves cordate-sagittate ; flowers numerous, sessile, small, rose-colored. Native of various parts of India, and the Cape Verde Islands.—*Hort. Cal. p.* 357 ; I. sessiliflora, *Roth.* ; *Wight's Icon. fig.* 169 ; Convolvulus sessiliflorus, *Spreng.* ; C. hispidus, *Vahl.* ; C. sphærocephalus, *Roxb. fl. Ind.* I. 472 ; *ed. Cary*, II. *p.* 53.

566. I. STAPHYLINA, (*Röm. & Sch.*) Perennial, twining, every part smooth ; leaves cordate, entire ; peduncles many-flowered ; flowers smallish, pale rose-colored, with a dark purple eye. Native of Coromandel, and Penang.—*Hort. Cal. p.* 358 ; I. racemosa, *Roth* ; *Wight's Illustr. fig.* 138 ; Convolvulus Malabaricus, *Roxb. fl. Ind.* I. *p.* 469 ; *ed. Cary*, II. *p.* 49.

567. I. STRIATA, (*Pers.*) Perennial, twining, with cordate leaves ; flowers largish, pale rose-colored, with a dark purple eye. Common, growing in hedges and thickets. Found in China, Java, Ceylon, &c.,—*Hort. Cal. p.* 358 ; I. sepiaria, *Kön.* ; *Roxb. fl. Ind.* I. *p.* 499 ; *ed. Cary*, II. *p.* 90 ; *Gra. Cat. B. pl. p.* 131. Convolvulus marginatus, *Desrouss*, C. striatus, *Vahl.*

568. I. DENTATA, (*Willd.*) Perennial, twining and creeping, muricated ; leaves cordate, three-lobed, dentate. Peduncles from two to three flowered ; flowers small, yellow. Native of China, Timor. Both Peninsulas of India, Bengal, Assam.—*Hort. Cal. p.* 359 ; I. chryseïdes, *Ker.* ; *Wight's Icon. fig.* 157 ; Convolvulus dentatus, *Vahl.* ; *Roxb. fl. Ind.* I. *p.* 477 ; *ed. Cary*, II. *p.* 62.

569. I. PES TIGRIDIS, (*Linn.*) Tigers-foot creeper. Annual, stems and leaves hairy ; flowers in involucred heads, small, white. Native of Manilla, Java, Ceylon. Both Peninsulas of India, Bengal.—*Roxb. fl. Ind.* I. *p.* 503 ; *ed. Cary*, II. *p.* 93 ;

Gra. Cat. B. pl. p. 132 ; *Wight's Icon. fig.* 836 ; *Hort. Cal. p.* 361 ; Convolvulus pes-tigridis, *Spreng.* ; C. bryoniæfolius, *Salisb.* ; C. palmata, *Mönch.*

570. I. VITIFOLIA, (*Swt.*) Perennial, hairy, leaves cordate, palmately 5 cleft ; flowers large, bright yellow. Travancore, Malabar Hill, Bombay, Silhet, Assam.—*Gra. Cat. B. pl. p.* 132 ; *Hort. Cal. p.* 361 ; Convolvulus vitifolius, *Linn.* ; *Roxb. fl. Ind.* I. *p.* 476 ; *ed. Cary.* II, *p.* 61.

QUAMOCLIT, (*Tourn.*) From *kyamos*, a kidney-bean, and *klitos*, dwarf ; the species of this genus resemble the kidney-bean in their climbing stems, but are less tall.

571. Q. PHŒNICEUM, (*Choisy.*) Crimson Quamoclit. Annual, twining, leaves cordate reniform, side sinuate ; flowers in the cold weather, of a most beautiful bright crimson colour : tube long, slender. Common in gardens. Native of the Moluccas, Coromandel, and Bengal.—*Gra. Cat. B. pl. p.* 129 ; *Hort. Cal. p.* 353 ; Ipomœa phœnicea, *Roxb. fl. Ind.* I. 502 ; *ed. Cary,* II. *p.* 92.

572. Q. PENNATUM, (*Voigt.*) Indian Forget-me-not. An annual, twining plant, with pinnate leaves ; leaflets filiform. Its elegant blossoms are " celestial rosy red, love's proper hue." (Sir W. Jones, quoting from Milton.) Native of North and South America, Mauritius, East Indies, northwards as far as Deyra Dhoon. —*Hort. Cal. p.* 353 ; Q. vulgare, *Choisy* ; *Gra. Cat. B pl. p.* 129 ; Ipomœa Quamoclit, *Linn.* ; *Roxb. fl Ind.* I. *p.* 513 ; *ed. Cary,* II. *p.* 93.

573. Q. β, ALBUM. White flowering Indian Forget-me-not.

BATATAS (*Choisy.*) According to Rumphius, a Malayan, and to Nieremburg, a Mexican, word.

574. B. EDULIS (*Choisy.*) Sweet or Spanish potatoe. Vullee kelungoo, *Tam.* Chellagada, Grasugada, *Tel.* Shukhur-kundoo aloo, *Beng.*

A perennial; stems creeping; flowers largish, pale rose-coloured, with a purple eye. This plant is cultivated every where for the sake of its potatoe like roots, which are much esteemed. In taste they are sweet and palatable, possessing a quantity of saccharine matter. The natives eat both the tubers, leaves, and tender shoots. There are two or three varieties of this plant.—*Gra. Cat. B. pl. p.* 129; *Hort. Cal. p.* 353; Convolvulus Batatas, *Linn.; Roxb. fl. Ind.* I. *p.* 483; *ed. Cary,* II. *p.* 69; Ipomœa Batatas, *Linn*; Convolvulus esculentus, *Spreng.*

575. B. PANICULATA, (*Choisy.*) Panicled Batatas. Perennial, twining; leaves palmate, 5 or 7 cleft. Flowers numerous, large, rose-coloured, with a dark purple eye. Root cathartic, and as such used by the natives. Cattle eat it. (*Roxb.*) Native of New Holland, Java, Guniea, Cayenne, E. Indies.—*Gra. Cat. B. pl. p.* 129; *Hort. Cal. p.* 353; Convolvulus paniculatus, *Linn.*; *Roxb. fl. Ind.* I. *p.* 478; *ed. Cary,* II. *p.* 63. Ipomœa paniculata, *R. Br.*; I. mauritiana, *Jacq.*; I. gossypifolia, *Willd.*; I. eriosperma, *Beauv.* C. roseus, *H. B. and Kth.*

576. B. PENTAPHYLLA, (*Choisy.*) Annual, twining, very hairy; flowers largish, white. Native of the Sandwich and Friendly Islands, W. Indies, S. America, Guinea, East Indies, &c. —*Gra. Cat. B. pl. p.* 129; *Hort. Cal. p.* 354; *Wight's Icon. fig.* 834; Convolvulus pentaphyllus, *Roy.*; C. hirsutus, *Roxb. fl. Ind.* I. *p.* 479; *ed. Cary, p.* 65; Ipomœa pentaphylla, *Jacq.*

PHARBITIS, (*Choisy.*) Meaning not explained.

577. P. PURPUREA, (*Voigt.*) An annual twining plant, flowers large. Native of South America. Cultivated in gardens. —*Hort. Cal. p.* 354; P. hispida, *Choisy*; Convolvulus purpurea, *Linn.*

578. P. NIL, (*Choisy.*) Morning glory. Annual, twining, hairy; leaves cordate, 3-lobed, downy. Flowers large, of a lovely, light bright blue. They appear in the rains; expand early in the morning and shut up during the day. Seeds sold in the native druggists' shops, under the name of *Kala dana,* as an effectual, quickly operating and safe cathartic: thirty to forty grains of the seeds, previously roasted gently, and powdered, make a sufficient dose for an adult. Found every where within the

tropics, both in America, Africa, and Asia, common in most parts of India.—*Gra. Cat. B. pl. p.* 130; *Hort. Cal. p.* 354; Convolvulus nil, *Linn.*; Ipomœa nil, *Roth.*; I. cœrulea, *Kon.*; *Roxb. fl. Ind.* I. *p.* 501; *ed. Cary*, II. *p.* 91.

RIVEA, Dedicated by Choisy, to Augusti de la Rive, a physiologist of Geneva.

579. R. BONA NOX, (*Choisy.*) Clove scented or Midnapore creeper. Perennial, twining; leaves roundish, emarginate. Peduncles 3-5 flowered; flowers pure transparent white, expanding at sun-set and perfuming the air with the scent of cloves. The Concans, Guzerat, Bengal.—*Hort. Cal. p.* 351; R. fragrans *Nimmo, Gra. Cat. B. pl. p.* Lettsomia bona nox.—*Roxb. fl. Ind.* I. 491; *ed. Cary*, II. *p.* 84. 127.

580. R. TILIÆFOLIA? (*Choisy.*) A large twining plant; flowers large, pale rose-colored. *Hort. Cal. p.* 350.

ARGYREIA, (*Lour.*) Named in reference to the white silvery texture of the leaves; from *argyreia*, silvery.

581. A. SPECISOA, (*Swt.*) Elephant creeper. A most extensive twining, running plant, over the highest trees. Flowers large, deep rose-coloured. The upper side of the leaves is used by the natives to act as a discutient; the under, or white side, as a maturant. Native of the East Indies, Java, and Isle of France.—*Gra. Cat. B. pl. p.* 129; *Hort. Cal. p.* 351; Convolvulus speciosa, *Linn.*; Ipomœa speciosa, *Pers*; Lettsomia nervosa, *Roxb. fl. Ind.* I. *p.* 488; *ed. Cary*, II. *p.* 78.

ORDER LXXVIII. CUSCUTACEÆ. LINDL.

DODDER TRIBE.

Description.—Leafless parasitic twining herbs, generally reckoned a sub-order of convolvulaceæ. They are marked by scales alternating with the corolline lobes, and a filiform spiral acotyledonous embryo. The seeds germinate in the usual way, and afterwards the plants become true parasites.

Distribution.—Natives of temperate regions, but seldom met with in the tropics. Known species 50.—*Balfour's Outlines of Botany, p.* 462; *Lindl. V. K. p* 33.

CUSCUTA, (*Linn.*) Derived from its Arabic name, *kechout.*

582. C. REFLEXA, (*Roxb.*) Dodder. A parasite with filiform, twining, succulent stems, leafless, smooth, yellow; flowers white, small.—*Gra. Cat. B. pl. p.* 134; *Roxb. fl. Ind.* I. *p.* 446; *ed. Cary*, I. *p.* 466; *Hort. Cal. p.* 349.

ORDER LXXIX. CORDIACEÆ. LINN.

SEBESTEN TRIBE.

Description.—Trees with alternate, exstipulate, rough leaves. Calyx 4-5-toothed. Corolla 4-5-cleft, regular. Stamens alternate with the corolline segments; anthers versatile. Ovary superior, 4-8-celled; stigma 4-8-cleft. Fruit drupaceous, 4-8-celled, with a single exalbuminous seed in each cell, pendulous by a long cord. Embryo with plaited cotyledons.

Distribution.—The species are for the most part, natives of the tropics of both hemispheres. Known species 180.

Properties.—Under the species.—*Balfour's Outlines of Botany, p.* 462; *Lindl. V. K. p.* 628.

CORDIA, (*Linn.*) In honor of E. Cordus, a German botanist of the sixteenth century.

583. C. ORIENTALIS, (*R. Br.*) A small tree; flowers largish, reddish-orange. Native of the Moluccas, and tropical New Holland.—*Hort. Cal. p.* 440; C. campanulata, *Roxb. fl. Ind.* I. *p.* 593; *ed. Cary*, II. *p.* 336.

584. C. SEBESTENA, (*Linn.*) Rough-leaved Sebesten. A tree, leaves ovate, rough: panicles, terminal: flowers large, orange scarlet, very showy. A small piece of the wood of this species put on a pan of lighted coals will perfume the whole house with a most agreeable smell.—(*G. Don.*) *Hort. Cal. p.* 440.

585. C. LATIFOLIA, (*Roxb.*) Broad-leaved Sebesten. A tree; from 12 to 25 feet high; leaves roundish cordate, entire, repand, 5 nerved, smooth above, scabrous beneath: flowers in terminal and lateral panicles, polygamous, numerous, small white, drupe about an inch in diameter, yellow when ripe, pulp soft, clammy, eaten by the natives. The young fruit are pickled, and also eaten as a vegetable. Silhet, Guzerat.—*Roxb. fl. Ind.* I. *p.* 539; *ed. Cary*, II. *p.* 330; *Gra. Cat. B. pl. p.* 136; *Hort. Cal. p.* 440.

586. C. MYXA, (*Linn.*) Smooth-leaved Cordia. Vidi-marum, *Tam.* Susora, *Hind.* Buhooari, *Beng.*

A middle sized tree: leaves ovate or obovate, repand: smooth above, rather scabrous beneath; panicles terminal, and lateral; flowers small, white; wood soft, and of little use except for fuel, and kindling fire by friction. Fruit (smaller sepestens or sebestans, Roxb. Colebr.) eaten by the Natives pickled or raw, smell of the nut when cut heavy and disagreeable. Kernels tasting like fresh filberts, (*Roxb.*) The tree abounds in a transparent glutinous juice. Native of both Peninsulas of India, Bengal, &c.—*Roxb. fl. Ind.* I. *p.* 590; *ed. Cary,* II, *p.* 332; *Gra. Cat. B. pl. p.* 136; *Hort. Cal. p.* 440; Cordia Officinalis or Sebestena domestica, *Linn.*; C. domestica, *Roth.*; Sebestena Officinalis, *Gærtn.*; S. domestica or Myxa, *Commel. Drury, U. P. p.* 161.

ORDER LXXX. BORAGINACEÆ, LINDL.

BORAGE TRIBE.

Description.—Herbs or shrubs, with round stems, alternate, rough leaves, and flowers in scorpioidal cymes. Calyx 4-5-divided, persistent. Corolla usually regular and 5-cleft, imbricate, often with faucial scales. Stamens alternate with the corolline segments. Ovary 4-lobed; style basilar. Fruit 2 or 4 distinct achænia. Seeds exalbuminous.

Distribution.—Natives of the northern temperate regions principally. Known species 683.

Properties.—Chiefly remarkable for their mucilaginous properties; some of the plants yield dyes, others are used as potherbs. *Borago Officinalis,* Borage, gives a coolness to beverages in which its leaves are steeped. *Mertensia maritima,* a sea-shore plant, has leaves which taste like oysters.—*Balfour's Outlines of Botany, p.* 462; *Lindl. V. K. p.* 655.

ANCHUSA, (*Linn.*) *A. tinctoria* was anciently used for staining the skin; hence the name, from *agchoresa,* paint for the skin.

587. A. ITALICA? A biennial, herbaceous plant; leaves linear lanceolate, hispid; flowers purplish blue.

TRICHODESMA, (*R. Brown.*) From *thrix,* a hair, and *desmos,* a bond; the anthers are bound to each other by hairs.

588. T. INDICUM, (*R. Br.*) Indian Trichodesma. An annual plant, with scabrous leaves, and pale blue flowers. It springs up very common in waste places during the rains.—*Gra. Cat. B. pl. p.* 134; *Hort. Cat. p.* 444; *Wight's Illustr. fig.* 172; Borago indica, *Linn*; *Roxb. fl. Ind.* I. *p.* 458; *ed. Cary,* II. *p.* 8.

589. T. ZEYLANICA. *(R. Br.)* An annual: stem purplish, hispid; flowers pale blue. Ceylon, Deccan, Bengal, New Holland. —*Gra. Cat. B. pl. p.* 134; *Hort. Cal. p.* 444; Borago zeylanica, *Linn.*; *Roxb. fl. Ind.* I. *p.* 458; *ed. Cary,* II. *p.* 10.

ORDER LXXXI. EHRETIACEÆ, MART.

EHRETIA TRIBE.

Description.—The plants of this order are often reckoned a sub-division of the Borage order, from which they differ in their terminal style, preceding from a concrete 4-celled ovary, and their drupaceous fruit.

Distribution.—Most of them are tropical trees or shrubs, natives of either hemisphere. Known species 297.

Properties.—Unimportant.—*Balfour's Outlines of Botany, p.* 463; *Lindl. V. K. p.* 653.

EHRETIA, *(Linn.)* In honour of D. G. Ehret, a celebrated German botanical draughtsman.

590. E. LÆVIS, *(Roxb.)* Smooth Ehretia. A tree, with ovate smooth leaves, and small white flowers in lateral corymbs. Peninsula of India, Bengal, Deyra Dhoon, &c.—*Roxb. fl. Ind.* I *p.* 597; *ed. Cary,* II. *p.* 341; *Gra. Cat. B. pl. p.* 137; *Hort. Cal. p.* 445; *Wight's Icon. fig.* 1382.

591. E. ASPERA, *(Roxb.)* Rough-leaved Ehretia. Shrubby: leaves ovate, above scabrous, below downy: corymbs terminal, dichotomous: drupe with a four celled nut: flowers small, white. Coromandel.—*Roxb. fl. Ind.* I. *p.* 598; *ed. Cary,* II. 342; *Hort. Cal. p.* 445.

592. E. BUXIFOLIA, *(Roxb.)* Box-leaved Ehretia. Shrubby: leaves wedge-shaped, apex tridentate, scabrous: peduncles from two to six-flowered: flowers small, white: nut five or six-celled. Coromandel, very common in barren lands and in forests.—*Roxb. fl. Ind.* I. *p.* 599; *ed. Cary, p.* 343; *Hort. Cal. p.* 446. *Drury, U. P. p.* 203.

HELIOTROPIUM, *(Linn.)* So named from *helios,* the sun, and *trope,* twining; the flowers are said to turn towards the sun.

> "Her looks their paleness in a flower retained,
> Still the lov'd object the fond leaves pursue,
> Still move their root, the moving sun to view,
> And in the *heliotrope* the nymph is true."
>
> *Ovid's Meta. Book 4.*

593. H. PERUVIANUM, *(Linn.)* Peruvian Heliotrope. A shrubby plant with sweet scented, lilac coloured flowers, in terminal spikes. Native of Peru.—*Gra. Cat. B. pl. p.* 135; *Hort. Cal. p.* 444.

TIARIDIUM, (*Lehm.*) From *tiara*, a Persian diadem, and *eidos*, like; form of the capsule.

594. T. INDICUM, (*Lehm.*) Indian Turnsole. Thail kodookoo, *Tam.* An annual, hairy plant, with lilac, or bluish coloured flowers, in terminal spikes. Common among rubbish, and waste places, by road sides, &c., during the cold weather.—*Gra. Cat. B. pl. p.* 135; *Hort. Cal. p.* 445; Heliotropium indicum, *Linn.*; *Roxb. fl. Ind.* I. *p* 454; *ed. Cary,* II. *p.* 1. *Drury, U. P. p.* 435.

ORDER LXXXII. NOLANACEÆ, LINDL.

NOLANA TRIBE.

Description.—Herbaceous or shrubby plants with alternate exstipulate leaves, having characters in common both with Convolvulaceæ and Boraginaceæ. Their distinguishing characters are their straight inflorescence, valvate calyx, plaited corolla, ovary composed of 5 or more separate carpels, variously combined, united styles, somewhat capitate stigma, and embryo curved in a small quantity of albumen.

Distribution.—The species are all South American, and chiefly Chilian. Known species 35.

Properties.—Unknown.—*Balfour's Outlines of Botany, p.* 463; *Lindl. V. K. p.* 654.

NOLANA, (*Linn.*) From *nola*, a little bell; because of the form of the corolla.

595. N. PROSTRATA, (*L. fil.*) Trailing Nolana. An annual: flowers largish, pale blue, dark-purple streaked. Native of Peru.—*Hort. Cal. p.* 348.

ORDER LXXXIII. SOLANACEÆ, LINDL.

NIGHT-SHADE TRIBE.

Description.—Herbs or shrubs, with alternate, often geminate leaves, cymose, generally extra-axillary inflorescence, and isomerous flower

Calyx and corolla, with 5, rarely 4, partitions. Corolline lobes nearly equal, æstivation valvate or induplicate-valvate. Stamens 5, very rarely sterile; anthers opening by slits or pores. Ovary generally bilocular; style simple; stigma 2-lobed or clavate. Fruit capsular or baccate, with two cells, rarely more, from placental septa. Seeds albuminous; embryo curved (Curvembryeæ) or straight (Rectembryeæ.)

Distribution.—Natives of various parts of the world, and abundant within the tropics.

Properties.—The plants of this order do not display the marked narcotic properties of the next order, and their juice, according to Dr. S. Anderson, does not cause dilatation of the pupil. Some of them yield edible tubers and fruit, others are tonic, pungent, and stimulant.—*Balfour's Outlines of Botany, p.* 463; *Lindl. V. K. p.* 618.

PHYSALIS, *(Linn.)* From *physa,* a bladder; alluding to the inflated calyx.

596. P. PERUVIANA, *(Linn.)* Cape Gooseberry or Peruvian Winter Cherry. Thuckkalee, *Tam.* A biennial, diffuse plant, with villous leaves, and small, yellowish flowers. Native of Peru, Antilles. Much cultivated in India, New Holland, &c. on account of its largish, yellowish, palatable berries, *here* generally called *gooseberries.* (*Voigt.*) *Hort. Cal. p.* 514; *Gra. Cat. B. p.* 140; *Roxb. fl. Ind.* I. *p.* 562; *ed. Cary,* II. *p.* 241.

597. P. FLEXUOSA, (*Linn.*) Shrubby: branches flexuose; leaves oblong, often paired: flowers axillary, crowded, sessile, small, pale greenish. Coromandel. Both the Concans, Guzerat, Bengal.—*Roxb. fl. Ind.* I. *p.* 561; *ed. Cary,* II. *p.* 240; P. somnifera, var. flexuosa; *Hort. Cal. p.* 513; *Wight's Icon. fig.* 855. *Drury, U. P. p.* 355.

CAPSICUM, (*Tournef.*) So named from *kapto,* to bite; on account of the hot, pungent qualities of the pericarp.

598. C. GROSSUM, (*Willd.*) Caffree Chilly. Kapree molagah, *Tam.* A shrubby plant: flowers small, white; fruit large. The thick fleshy skin of this species is but triflingly acrid, and a palatable condiment is made of them. Supposed to be a native of Nepal. Cultivated all over India.—*Roxb. fl. Ind.* I. *p.* 574; *ed. Cary,* II. *p.* 260; *Hort. Cal. p.* 510.

599. C. ANNUUM, (*Linn.*) Common Chilly. Molagah, *Tam.* Mirchie, *Hind.* In India the *capsicums* are all shrubby, but produce so badly after the first year, and begin to look so scraggy that they are seldom suffered to remain longer than one season. Flowers smallish, white. Native of South America.—*Roxb. fl. Ind.* I. *p.* 573; *ed. Cary*, II. *p.* 260; *Hort. Cal. p.* 510. *Drury, U. P. p.* 111.

600. C. FRUTESCENS, (*Linn.*) Goat-pepper plant. Mollaghai, *Tam.* Merapakaia, *Tel.* Lal-lungka-murich, *Beng.* Lal-gach-murich, *Hind.* This plant is extensively cultivated all over India flowers small, white; in fruit the whole year, fruit red.—*Roxb. fl. Ind.* I. *p.* 574; *ed. Cary*, II. *p.* 261; *Gra. Cat. B. pl. p.* 139 *Hort. Cal. p.* 500, C. flavum, yellow fruited variety.

601. C. FASTIGIATUM, (*Blume.*) Cayenne-pepper Capsicum. Ooseemoollaghai, *Tam.* A shrubby plant, flowers smallish, white. This plant yields fruit for a number of years; fruit small, generally used for pickles, very acrid.—*Hort. Cal. p.* 510; C. minimum. *Roxb. fl. Ind.* I. *p.* 574; *ed. Cary, p.* 261.

SOLANUM, (*Linn.*) The derivation of this word is quite uncertain; some derive it from *sol*, the sun; others say it is *sulanum*, from *sus*, being serviceable in disorders of swine; and others assert that it is from *solor*, to comfort; referring to its soothing narcotic effects.

602. S. TUBEROSUM, (*Linn.*) Potatoe plant. Ooraloo kezhungoo, *Tam.* Potatoes are seldom cultivated in the Madras gardens, and when they are grown "on the plains are hardly fit for human food in consequence of their never arriving at maturity," (*Jaffrey.*) Flowers middle sized, white or blue. Native of the West Coast of S. America. Cultivated all over the world.—*Hort. Cal. p.* 510; *Gra. Cat. B. pl. p.* 138.

603. S. MELONGENA, (*Linn.*) Brinjal or Egg plant. Kattheree-kai, *Tam.* Wankai, *Tel.* Bynghen; *Hind.*

Perennial: stem clothed with stellate tomentum: leaves ovate, unequal at the base, angularly sinuated, downy; flowering peduncles solitary, reflexed: calyx prickly, campanulate: segments linear lanceolate: corolla

violaceous, 6-9 cleft, marked by a yellow star inside: fruit oval, smooth. Flowers nearly all the year.—*Don's Mill.* IV. 432.

The varieties are:

a. Stem, leaves, and calyxes unarmed or nearly so. (Solanum ovigerum, *Dun. Röm and Sch.*; S. melongena, *Linn.—Willd*; *Roxb. fl. Ind. I. p.* 566; *ed. Cary,* II. *p.* 248; S. pseudo-undatum. *Bl.*) Begoon, *Beng.* Brinjal, Egg plant, *Eng.* Bangun, *Hind.* Wankai, *Tel.* All over India. Flowers largish, violet.

b. Stem, leaves, and calyxes more or less aculeate. (Solanum esculentum, *Dun*; S. melongena, *Linn. suppl.*—S. insanum, *Linn. Willd.*—(not Roxb.) S. longum, *Roxb. fl. Ind.* I. *p.* 567; *ed. Cary,* II. *p.* 248.—Neelavaloothana, *Rheede* X *t.* 74.)—Koolibegoon, *Beng.* Long brinjal, *Eng.* Flowers largish, bright bluish purple.

The fruit of each of these varieties is either ovate-oblong or oblong, violet or white; or globular (larger and smaller,) violet; or more or less globular, white, or white striped on a violet ground.—*Hort. Cal. p.* 512. The Brinjal is one of the most useful of Indian vegetables. *Drury, U. P. p.* 409.

604. S. INCERTUM, *(Dun.)* Mannuttha-kalee, *Tam.* An annual; flowers small, white. The leaves are used as a pot herb; the fruit and leaves in the preparation of chatnies. Commonly cultivated by the Natives.—*Hort. Cal. p.* 511; *Gra. Cat. B. pl. p.* 137; *Jaffrey's Hints, p.* 59.

605. S. TORVUM, (*Swz.*) Choonday-kai, *Tam.* Goto-begoon, *Beng.* A shrubby, erect plant; flowers largish, white. A comcom weed. Found in Bengal, &c. Jamaica, Hispaniola, Bermuda Islands.—*Hort. Cal. p.* 511; *Wight's Icon. fig.* 345; S. stramonifolium, *Lam.*; *Poir*; *Roxb. fl. Ind. ed. Cary,* II. *p.* 256.

606. S. TRILOBATUM, (*Linn.*) Three-lobed Solanum. Toodoovullay, *Tam.* Moodla moosteh, Oochinta kura, *Tel.* A shrubby, scandent plant; armed with recurved prickles; berries resemble red currants. The roots, leaves and tender shoots are all used medicinally. This is a common plant found creeping on the ground or among hedges and bushes. The colour of the flowers varies from white to purplish, the berries red.—*Roxb. fl. Ind.* I. *p.* 574; *ed. Cary,* II. *p.* 251; *Wight's Icon. fig.* 854; *Gra. Cat. B. pl. p.* 138; *Hort. Cal. p.* 513. *Drury, U. P. p.* 411.

607. S. JACQUINI, (*Willd.*) Jacquin's Solanum. Cundunghatrie, *Tam.* Van-kuda or Nella mollunga, *Tel.* Kootaya

Hind. Chudrakantakaree, *Beng.* A diffuse plant, trailing on the ground ; completely armed with prickles ; flowers bluish purple ; berries red, size of a plum. The fruits are used medicinally, and are also much esteemed by the natives who eat them in their curries. Common everywhere.—*Gra. Cat. B. pl. p.* 139 ; *Hort. Cal. p.* 513 ; *Wight's Icon. fig.* 1401. *Drury, U. P. p.* 409.

608. S. CORIACEUM, (*Hook.*) A shrub, leaves petioled, oblong, coriaceous, shining, entire, rather veiny. Peduncles terminal and axillary, generally one-flowered ; flowers pale blue, berries violet coloured.

609. S. ARBOREUM ? A small handsome tree ; stem prickly, young branches woolly ; leaves broadly ovate, angularly lobed, long petioled, woolly, prickly beneath ; racemes much shorter than the leaves, pedicels and calyces without prickles. Flowers large, dark purple, changing to white. Introduced from Ceylon by G. S. Hooper, Esq.

LYCOPERSICON, (*Tournef.*) so named from *lykos*, a wolf, and *persicon*, a peach ; in allusion to its aphrodisaical qualities.

610. L. ESCULENTUM, (*Mill.*) Love-apple, Tomato or Wolf-peach. Seemei thuck-kalee, *Tam.* Cultivated in gardens for the fruit, which is used for sauces, chatnies, garnishing, soup, &c. ; produces the best fruit when trained on a trellis, (*Jaffrey.*) Flowers small, cream-coloured. Native of S. America. Domesticated in India.—*Hort. Cal. p.* 513 ; *Gra. Cat. B. pl. p.* 139 ; Solanum Lycopersicum, *Linn.* ; *Roxb. fl. Ind.* I. *p.* 565 ; *ed. Cary*, II. *p.* 245 ; Pomum amoris, *Blackw.*

ORDER LXXXIV. ATROPACEÆ, MIER.

DEADLY NIGHT-SHADE TRIBE.

Description.—This order agrees in most respects with the last, of which it may be considered a section. Miers makes it a separate order, distinguished from Solanaceæ by its corolline æstivation being more or less imbricate, never valvate. The lobes of the coralla are somewhat unequal. Stamens 5, of which sometimes 1, very rarely 3, are sterile ; anthers dehisce longitudinally.

Distribution.—Similar to Solanaceæ. The two orders contain about 1,050 known species.

Properties.—The plants of this order are in general narcotic poisons. Their juice has the property of causing dilatation of the pupil. *Atropa Belladonna,* Deadly night-shade, has shining black berries. It contains an alkaloid, *atropia,* to which its narcotic properties are due. *Mandragora officinalis,* the Mandrake, stimulates the nervous system. "The root is supposed to be the Hebrew Dudaim, translated Mandrakes in Scripture. (Genesis xxx. 14-16; and Songs of Solomon, vii. 13). Some think that *M. autumnalis* of Bertoloni, a plant with deep mazarin blue flowers, is the real Mandrake of Scripture. It is a native of the South of Italy and the Levant."—*Balfour's Outlines of Botany, p.* 464.

NICOTIANA, *(Linn.)* In honour of John Nicot, of Nismes, ambassador from the king of France to Portugal, who procured the first seeds from a Dutchman, who had them from Florida.

611. N. TABACUM, *(Linn.)* Common Tobacco plant. Pogheieley, *Tam.* Poghako, *Tel.* Tumak, *Beng.* Tambak, *Hind.*

Remarks.—Tobacco, the use of which has now become to many persons an indispensible luxury, is the foliage of various species of Nicotiana; all the American Tobacco is furnished by *N. Tabacum* or its varieties, the Persian by *N. persica,* and the Syrian by *N. rustica.* It is a powerful narcotic and depressant, employed formerly in medicine as a sedative. When chewed it appears to impair the appetite. Although if smoked in moderate quantities it acts as a harmless excitant and sedative, yet it is a frequent cause of disease when the practice is indulged in to excess. Oil of Tobacco, which is inhaled and swallowed in the process of smoking is one of the most violent of known poisons. The Hottentots are said to kill snakes by putting a drop of it on their tongues, and the death of the reptiles is said to take place as instantaneously as if by an electric shock; dangerous symptoms are reported to have followed the application of the ointment to scald heads. *(Lindl.)* An annual; flowers large, rose coloured. Native of America. Cultivated all over the world—*Hort. Cal. p.* 516; *Gra. Cat. B. pl. p.* 140; *Bal. Cyclop. of India.*

DATURA, *(Linn.)* An alteration of the Arabic name *Tâtòrah.*

612. D. ALBA, *(Rumph.)* White flowered Thorn-apple. Vellei-oomathen, *Tam.* Tella-oomatie, *Tel.* Dhootoora, *Beng.* Sada-dhatoora, *Hind.* An annual, very common every where all over India; produces flowers and seeds the whole year. Flowers large, white. A strong narcotic; in India frequently and sometimes fatally employed by thieves and others to deprive their victims of the power of resistance.—*Hort. Cal. p.* 515; *Gra. Cat. B. pl. p.* 141; *Wight's Icon. fig.* 852; D. metel, *Roxb. fl. Ind.* I. *p.* 568; *ed. Cary,* II. *p.* 238. *Drury, U. P. p.* 188.

613. D. FASTUOSA, (*Mill.*) Purple Thorn apple. Karoo-oomathen, *Tam.* Nulla-oomattie, *Tel.* Kala-Dhatoora, also Lal-Dhatoora, *Hind.* Kala Dhootoora, *Beng.* An annual, equally as common, and more virulently poisonous than the former species. Flowers very large, outside dark purple, inside whitish. They are sometimes double; [and occasionally exhibit a variety of other interesting morphological alterations in the stamens, &c.] *Roxb. fl. Ind.* I. *p.* 561; *ed. Cary*, II. *p.* 238; *Gra. Cat. B. pl. p.* 141; *Wight's Icon. fig.* 1396; *Hort. Cal. p.* 515. *Drury, U. P. p.* 189.

BRUGMANSIA, (*Pers.*) Named in honour of Professor S. J. Brugmans.

614. B. SUAVEOLENS, (*Pers.*) Sweet-scented Brugmansia. A large shrub, with very large trumpet-shaped, white cream-coloured flowers, opening at night, when they are very fragrant. [Anthers syngenesious]. Native of Peru, Chili and Mexico. Datura suaveolens, *Willd*; *Hort. Cal. p.* 516.

615. B. SANGUINEA. (*R. & P.*) A shrub, leaves sinuately lobed, sub-tomentose as well as petioles and branches. Points of corolla elongated, calyx 3-5-lobed. Flowers large, reddish orange coloured. Native of Peru.

PETUNIA, (*Juss.*) The Brazilian name of Tobacco is *Petun*; applied to this genus because of its affinity with *Nicotiana.*

616. P. GRANDIFLORA, (*Hort.*) Large-flowered Petunia. There are several varieties of this plant, all very pretty, and well adapted for flower beds. The colours of the flowers are various.

NICANDRA. (*Adans.*) Named in honour of Nicander, a Greek physician who lived about 50 years B. C.

617. N. PHYSALOIDES, (*Gærtn.*) An annual plant, with oval, oblong, unequally sinuated leaves; and pretty large, bell shaped, blue flowers. Native of Chili and Peru.—*Gra. Cat. B. pl. p.* 240; *Hort. Cal. p.* 514.

SOLANDRA, (*Swz.*) In honour of Daniel Charles Solander.

L.L. D. F. R. S., a Swede, companion of Sir Joseph Banks in his voyage round the world, and collector of the botanical notes made during that expedition. They are preserved in the British Museum, and exhibit great learning and research.

618. S. GRANDIFLORA, (*Swz.*) Large flowering Solandra. A scandent shrub ; flowers large, pale yellow. Native of Jamaica.—*Hort. Cal. p.* 515.

ORDER LXXXV. SCROPHULARIACEÆ, LINDL.

FIGWORT TRIBE.

Description.—Herbs or undershrubs, with opposite, whorled, or alternate leaves, and anisomerous flowers. Calyx of 5 or 4 parts. Corolla irregular, lobes unequal, imbricate in æstivation. Stamens 2 or 4, didynamous, rarely 5, or with a rudimentary fifth. Ovary bilocular, carpels anterior and posterior. Fruit capsular, rarely baccate, usually 2-celled, seeds albuminous, with a straight or slightly curved embryo.

Distribution.—Natives of all parts of the world, cold as well as hot. Known species about 1700.

Properties.—The Figworts are more or less suspicious in their properties, some are acrid, others sedative. There are many showy garden plants in this order. *Digitalis pupurea*, Foxglove, is used medicinally as a diuretic and sedative of the heart's action.—*Balfour's Outlines of Botany, p.* 465 ; *Lindl. V. K. p.* 681.

BROWALLIA, (*Linn.*) Named in honor of J. Browallius, bishop of Abo.

619. B. ELATA, (*Linn.*) Upright Browallia. A very showy annual; flowers middle sized, blue. Native of Peru.—*Hort. Cal. p.* 500.

620. B. ALBIFLORA. White flowered variety.

BRUNSFELSIA, (*Plum.*) In honour of Otho Brunsfels, of Mentz, a carthusian monk and physician.

621. B. AMERICANA, (*Linn.*) American Brunsfelsia. A handsome shrub : leaves obovate acuminate, longer than petiole ; tube of corolla straight, limb entire; flowers large, greenish white, with a tinge of sulphur. Native of the W. Indies.—*Hort. Cal. p.* 500.

FRANCISCEA, (*Pohl.*) In honour of Francis, emperor of Austria, a patron of botany.

622. F. UNIFLORA, (*Pohl.*) One-flowered Franciscea. A shrub, branches spreading; leaves elliptic acute. Bracts lanceolate, glabrous, as are the calyces; flowers solitary, middle sized, fragrant, indigo coloured, with a pale tube, and its mouth on the lower margin yellow. Rio-Janeiro.—*Hort. Cal. p.* 500. F. Hopeana, *Hook.*

ANGELONIA, (*Humb. et Bp.*) So named from *angelon*, its name in the Caraccas.

623. A. SALICARIÆFOLIA, (*Kunth.*) A pretty, herbaceous perennial, flowers blue; in flower nearly throughout the year.

ANTIRRHINUM, (*Linn.*) Derived from *anti*, similar, and *rhin*, nose; the flowers of most of the species bear a perfect resemblancee to the snout of some animals.

624. A. MAJUS, (*Linn.*) Snap-dragon. A perennial, herbaceous plant; flowers large; purple, red, scarlet, white, or variegated with these colours. The snap-dragon is generally grown as an annual in the Madras gardens, as they do not thrive well after the first year.—*Hort. Cal. p* 499.

MAURANDYA. (*Jacquin.*) In honour of Dr. Maurandy, professor of botany at Carthagena.

625. M. BARCLAYANA, (*Lindl.*) Barclay's Maurandya. A very pretty creeper, with large, dark purple flowers. Native of Mexico.—*Hort. Cal. p.* 499.

626. M. ANTIRRHINIFLORA, (*Willd.*) A creeper, like the last; flowers large, pink, white or blue. Native of Mexico.—*Hort. Cal. p.* 499; *Gra. Cat. B. pl. p.* 142.

LOPHOSPERMUM, (*Don.*) From *lophos*, a crest, and *sperma*, a seed; the seeds are furnished with a crest-like wing.

627. L. SCANDENS, (*Hook.*) Climbing Lophospermum. A herbaceous, climbing plant, with large pink flowers. Native of Mexico.

Russelia, (*Jacq.*) In honour of Alexander Russel, M. D., F. R. S., author of a Natural History of Aleppo, 1756.

628. R. floribunda, (*H. B. & Kth.*) A shrubby plant, with middle sized, scarlet flowers. Native of Mexico.—*Hort. Cal. p.* 501.

629. R. juncea, (*Zuccarini.*) A graceful, shrubby plant; branches tetragonal, erect, rushy, leaves small ovate; peduncles filiform; flowers middle sized, scarlet. Native of Mexico.—*Hort. Cal. p.* 501.

Limnophila, (*R. Br.*) From *limne*, a lake, and *phileo*, to love; water loving plants.

630. L. gratioloides, (*R. Br.*) A small annual; to be found in tanks and other moist places; flowers small, greenish white, streaked with purple. Native of Ceylon, Coromandel, Bombay, Bengal, &c., also Tropical N. Holland.—*Gra. Cat. B. pl. p.* 143; *Hort. Cal. p.* 502; Columnea balsamica, *Roxb. fl. Ind.* III. *p.* 97.

Torenia, (*Linn.*) In honour of Olof Toren, a Swedish clergyman, who discovered *T. asiatica*, and other plants in China.

631. T. asiatica, (*Linn.*) Asiatic Torenia. A glabrous herbaceous plant, with creeping stem, and heart-shaped, serrated leaves on long petioles; flowers generally blue. Coromandel, South Concan, Amboyna, Chittagong and Bengal.—*Gra. Cat. B. pl. p.* 144; *Hort. Cal. p.* 505; *Wight's Icon. fig.* 86;—T. hians and vagans, *Roxb. fl. Ind.* III. *p.* 96; Gratiola alata, *Roxb. fl. Ind.* I. *p.* 137; *ed. Cary*, 1. *p.* 137?

632. T. cordifolia, (*Roxb.*) Heart-leaved Torenia. An annual; with tetragonal stems. and ovate leaves; flowers largish, bluish, purple. Circars, South Concan, Bengal, &c.—*Roxb. fl. Ind.* III. *p.* 95; *Gra. Cat. B. pl. p.* 144: *Hort. Cal. p.* 505.

Vandellia, (*Linn.*) Named in honour of Dominico Vandelli. professor of botany at Lisbon.

633. V. roxburghii, (*G. Don.*) An annual, diffuse plant; flowers small, blue. Coromandel, Bombay, Bengal.—*Gra. Cat. B. pl. p.* 144; *Hort. Cal. p.* 504;—Torenia diffusa, *Roxb. fl. Ind.* III. *p.* 95.

Order LXXXVI. LABIATÆ or LAMIACEÆ. Juss. Lindl.

Labiate or Dead-nettle Tribe.

Description.—Herbs or undershrubs, with tetragonal stems, opposite, exstipulate, often aromatic leaves, and flowers in verticillasters. Calyx tubular, persistent, 5 or 10 toothed or bilabiate. Corolla bilabiate. Stamens 4, didynamous, by abortion 2; anthers 2-celled, or 1 celled by abortion. Ovary deeply 4-lobed, on a disk, style basilar; stigma bifid. Fruit 1-4 achœnia, enclosed by the calyx. Seeds erect, with little or no albumen.

Distribution.—Natives chiefly of temperate climates. Known species 2350.

Properties.—Labiate plants have no deleterious qualities. They are generally aromatic and fragrant. Some are tonics. Many of them such as Lavender, Mint, Thyme, Sage, Rosemary, Marjoram, Basil, Savory, and Hyssop, are used as carminatives and antispasmodics, and cultivated in gardens for culinary purposes. Many contain a kind of stearoptene like camphor; oils are procured from the leaves of most of the species, and to these their fragrance is due.—*Balfour's Outlines of Botany, p.* 446. *Lindl. V. K. p.* 659.

Ocymum, (*Linn.*) From *ozo*, a smell; alluding to the powerful smell of the plants.

634. O. canum, (*Linn.*) Hoary Basil or Wild Mint. An annual; pubescent; leaves ovate, cordate; flowers white, in simple terminal racemes. Native of Madagascar, East Indies, China, Brazil, &c.—*Gra. Cat. B. pl. p.* 147; *Hort. Cal. p.* 447; O. album, *Roxb. fl. Ind.* III. *p.* 15.

635. O. basilicum, (*Linn.*) Common or sweet Basil. An annual, smooth, erect plant, with white flowers. The leaves and slender stalks of this and some other species are used in seasoning dishes.—*Gra. Cat. B. pl. p.* 147.—*Drury, U. P. p.* 326.

636. O. β. thyrsiflorum. (*Benth.*) Tirnoot patchei, *Tam.* Subjah, *Hind.* This plant is very aromatic and fragrant; flowers small, pale pink; common in gardens.—*Drury, U. P. p.* 326.

637. O. sanctum, (*Linn.*) Holy Basil Toolasee. *Tam.* Kala-toolsic, *Hind.* Kalo-tulsee.

Remarks.—The whole plant is of a dark purple colour, and has a grateful smell. The root is given in decoctions in fevers and the juice of the leaves in catarrhal affections in children. Also an excellent remedy mixed with lime juice, in cutaneous affections, ring worm, &c. This plant is considered by the Brahmins as sacred to Vishnoo. The root is made into beads and worn round the neck and arms of Vishnoo-Brahmins. Cultivated in gardens and near Pagodas. (*Useful Plants of India.*)—*Roxb. fl. Ind.* III. *p* 14 ; *Gra. Cat. B. pl. p.* 147 ; *Hort. Cal. p.* 448.—*Drury, U. P. p.* 327.

COLEUS, (*Lour.*) Derived from *koleos*, a sheath ; referring to the manner in which the stamens are united.

638. C. BARBATUS, (*Benth.*) Annual ; stem shrubby at the base ; flowers beset with white hairs of a light purple colour ; flowers light purple. The whole plant possesses a strong, though not disagreeable odour. (*Roxb.*)—*Gra. Cat. B. pl. p.* 148 ; *Hort. Cal. p.* 449 ; Plectranthus monadelphus, *Roxb. fl. Ind.* III. *p.* 22.—*Drury, U. P. p.* 155.

639. C. AROMATICUS, (*Benth.*) Country Borage. A perennial, shrubby plant, with thick fleshy leaves, and small pale blue flowers ; leaves and all parts of the plant, delightfully fragrant. The former are frequently eaten with bread and butter, or bruised and mixed with various articles of food, drink or medicine. Common in gardens, found in Cochin-China, Moluccas, India.—*Roxb. Gra. Cat. B. pl. p.* 148 ; *Wight's Illustr. fig.* 175 ; C. amboinicus, *Lour.* ; *Hort. Cal. p.* 450 ; Plectranthus aromaticus, *Roxb. fl. Ind.* III. *p.* 22.—*Drury, U. P. p.* 154.

640. C. SECUNDIFLORUS, (*Benth.*) A perennial, shrubby plant, with small, pale blue flowers. The whole plant has a heavy disagreeable smell.

POGOSTEMON, (*Desf.*) From *pogon*, a beard, and *stemon*, a stamen.

641. P.———? A small shrubby plant, flowers pinkish white. The flower spikes have a strong aromatic smell. The leaves are scentless.

MENTHA, (*Linn.*) The poets celebrate Minthe, a daughter of Cocytus, as being turned into mint by Proserpine in a fit of jealousy.

> "Could Pluto's queen with jealous fury storm,
> And Menthé to a fragrant herb transform."
>
> *Ovid's Meta, Book* 10.

642. M. PIPERITA, (*Linn.*) Peppermint. An aromatic herb, flowers small, purple. Native of N. Europe. Cultivated throughout Europe, Egypt, Asia, and America.—*Hort. Cal. p.* 452.

643. M. VIRIDIS, (*Linn.*) Spearmint. Cultivated in gardens, used for seasoning dishes, &c., flowers small, purplish. Native of the temperate parts of Europe. C. G. H., N. & S. America, where, as in our gardens, it is probably but domesticated.—*Hort. Cal. p.* 452.

SALVIA, (*Linn.*) From *salvo*, to save; in allusion to the healing qualities of the sage.

644. S. OFFICINALIS, (*Linn.*) Common Sage. Saisyellei, *Tam.* A small shrub, used as a pot herb. Native of S. Europe. —*Gra. Cat. B. pl. p.* 151; *Hort. Cal. p.* 454.

645. S. COCCINEA, (*Linn.*) Scarlet Salvia. Sais ellei, *Tam.* Perennial; flowers large, scarlet. Native of South America. Domesticated in many parts of India.—*Hort. Cal. p.* 455.

646. S. SPLENDENS, (*Sello.*) Splended Salvia. Perennial; flowers large, scarlet. Native of S. America. This is a very showy plant when well grown.—*Hort. Cal. p.* 455.

647. S. PATENS, (*Linn.*) Perennial, flowers large, blue. Native of Mexico.

MAJORANA, (*Mœnch.*) An alteration of the Arabic name, *maryamych.*

648. M. HORTENSIS, (*Mœnch.*) Sweet Marjoram. An annual; flowers small, purplish or white. Native of North Africa.—*Gra. Cat. B. pl. p.* 152; *Hort. Cal. p.* 456.

ORIGANUM, (*Linn.*) From *oros*, a mountain, and *ganos*, joy; in allusion to the habitation of the plants.

649. O. VULGARE, (*Linn.*) Common Marjoram.. A perennial; flowers small, rose-coloured or purple. Native of Europe, N. Africa, middle Asia, Siberia, Cashmere.—*Hort. Cal. p.* 456.

THYMUS, (*Linn.*) From *thumos*, strength, courage, the smell of the leaves being reviving; or from *thuo*, to perfume, being formerly used for incense in temples.

650. T. VULGARIS, (*Linn.*) Common Thyme. A perennial; flowers purple; rarely flowers in the Madras gardens. Native of dry, arid, uncultivated places in the S. of Europe.—*Hort. Cal. p.* 457; *Gra. Cat. B. pl. p.* 152.

LEONURUS, (*Linn.*) From *leon*, a lion, and *oura*, a tail; in allusion to the appearance of the spike of flowers.

651. L. SIBERICUS, (*Linn.*) Siberian Mother-wort. An annual, erect plant, leaves three lobed, multifid; flowers small, deep rose-coloured. Native of Asia, Africa, and America.—*Hort. Cal. p.* 460; L. Tartaricus, *Burm.*; *Roxb. fl. Ind.* III. *p.* 8; not L.

ANISOMELES, (*R. Brown.*) From *anisos*, unequal, and *melos*, a member; in allusion to the anthers of the lower stamens being halved.

652. A. OVATA, (*R. Br.*) An annual plant, growing to the height of 3 or 4 feet; flowers middle sized, reddish purple. Common. Found in Ceylon, Coromandel, Bombay, Bengal and Nepal.—*Gra. Cat. B. pl. p.* 153; *Wight's Icon. fig.* 865; *Hort. Cal. p.* 460; Ajuga disticha, *Roxb. fl. Ind.* III. *p.* 2.

653. A. MALABARICA, (*R. Br.*) Peimaruttei, *Tam.* A shrubby plant, stem square, covered with a white woolly substance; leaves opposite, ovate, lanceolate, soft and white beneath; flowers largish, pale purple. Java, both Peninsulas of India, Mauritius.—*Gra. Cat. B. pl. p.* 153; *Wight's Icon. fig.* 864; *Hort. Cal. p.* 460. Ajuga uticosa, *Roxb. fl. Ind.* III. *p.* 1. *Drury, U. P. p.* 40.

LEUCAS, (*R. Brown.*) From *leukos,* white; in allusion to the downy whiteness of the flowers.

654. L. ASPERA, (*Spreng.*) Thoombei keerei, *Tam.* Chhoto-hulkusa, *Beng.* An annual; flowers small, white. This plant possesses a considerable degree of peculiar fragrance. Its leaves are used as a potherb by the natives. (*Roxb.*) Common every where during the cold season.—*Gra. Cat. B. pl. p.* 153; *Hort. Cal. p.* 461; Phlomis esculenta, *Roxb. fl. Ind.* III. *p.* 10.

LEONOTIS, (*Pers.*) From *leon,* a lion, *ous,* an ear; in allusion to some fancied resemblance in the flowers.

655. L. NEPETÆFOLIA, (*R. Br.*) A tall, erect growing plant, with dark orange-coloured flowers, in globular whorls, with the calyces spinous-toothed. Peninsula of India, Bengal, Silhet, &c. Tropical Africa, W. Indies, Brazil.—*Gra. Cat. B. pl. p.* 153; *Hort. Cal. p.* 462; *Wight's Icon. fig.* 867; Phlomis nepetæfolius, *Linn.*; *Roxb. fl. Ind.* III. p. 8.

ORDER LXXXVII. VERBENACEÆ, JUSS.

VERVAIN TRIBE.

Description.—Herbs, shrubs, or trees, with exstipulate, usually opposite leaves, resembling much the Labiatæ in their characters, and differing in their achœnia being concrete, their style terminal, and their leaves usually not containing receptacles of oil. Corolla generally irregular. Stamens 4, didynamous, or 2; anthers 2-celled. Seeds erect or ascending; radicle inferior.

Distribution.—Natives of both temperate and tropical regions. Known species 663.

Properties.—The properties of the Verbenas are much the same as those of Labiates, but they are not of importance in a medicinal or economical point of view. Some of the plants possess bitter, tonic and aromatic qualities.—*Balfour's Outlines of Botany, p.* 467; *Lindl. V. K. p.* 663.

VERBENA, (*Linn.*) Said to be from its celtic name *ferfaen.*

656. V. BONARIENSIS, (*Linn.*) A perennial; leaves oblong lanceolate, stem clasping; flowers small, dark purple. Native of Buenos Ayres.

657. V. LAMBERTI, (*B. M.*) Lambert's Verbena. Perennial; flowers purple. Native of South America.

658. V. AUBLETIA, (*Linn.*) A biennial; flowers purple.

659. V. HYBRIDUS, (*Hort.*) Common Verbena. There are many varieties of these beautiful plants, the flowers are scarlet, blue, white, lilac, and various shades of these colors.

STACHYTARPHETA, (*Vahl.*) From *stachys*, a spike, and *tarphcios*, dense; manner of flowering.

660. S. JAMAICENSIS, (*Vahl.*) Jamaica Vervain. An annual plant with pretty blue flowers in terminal spikes. Common during the cold weather.—*Hort. Cal. p.* 471; *Gra. Cat. B. pl. p.* 154.

661. S. URTICÆFOLIA, (*Linn.*) Nettle-leaved Vervain. A perennial shrubby plant; flowers in terminal spikes, indigo-coloured. Native of S. America.—*Hort. Cal. p.* 471.

662. S. MUTABILIS. (*Vahl.*) Bastard Vervain. A shrubby plant with very pretty scarlet or variegated flowers in terminal spikes. Native of the Caracas.—*Hort. Cal. p.* 471; *Gra. Cat. B. pl. p.* 154.

ALOYSIA, (*Ortega.*) Named in compliment to Maria Louisa, Queen of Spain, by Don Antonio Palan, botanist at Madrid,

663. A. CITRIODORA, (*Ort.*) Lemon scented Verbena. A shrubby plant, with linear lanceolate, ternate leaves, and flowers in axillary and terminal sub-panicled spikes, small white. This plant is much esteemed for the delightful fragrance of its leaves. —*Gra. Cat. B. pl p.* 154; *Hort. Cal. p.* 471.

ZAPPANIA, (*Juss.*) In honor of Zappa, an Italian botanist.

664. Z. NODIFLORA, (*Lam.*) A perennial, procumbent, often succulent plant: with minute, white or pale rose-coloured flowers, collected into compact heads, which go on lengthening with age, those first opening having passed into seed before the last opens. Found growing in moist soils every where, especially on the banks of streams. This plant is truly cosmopolite within the tropics.—*Wight's Icon. fig.* 1463; *Gra. Cat. B. pl. p.* 158;

Hort. Cal, p. 472; Lippia repens, *Spreng.*; Lippia nodiflora, *Rich.*; Verbena cuneata, *Willd.*; V. nodiflora, *Linn.*

LANTANA, (*Linn.*) An ancient name of *Viburnum*, and applied to this genus by Linnæus because of its affinity.

665. L. INDICA, (*Roxb.*) Indian Lantana. A shrubby, erect plant; stems four sided, clothed with short hairs, of a dark color; leaves opposite, cordate, rugose, hairy underneath; flowers in ovate heads, numerous, of a light purple colour, inodorous.—*Roxb. fl. Ind.* III. *p.* 89; *Gra. Cat. B. pl. p.* 156; *Hort. Cal. p.* 472.

666. L. MELISSÆFOLIA, (*Ait.*) Balm-leaved Lantana. A shrub: native of the W. Indies.

667. L. ACULEATA, (*Linn.*) Prickly Lantana. A straggling, scandent shrub, with opposite, ovate leaves; stem square, prickly; flowers orange scarlet. Native of Jamaica, and most W. Indian Islands, where it is called *Wild Sage*, on account of the strongly aromatic smell of the leaves.—*Gra. Cat. B. pl. p.* 156; *Hort. Cal. p.* 472.

668. L. MIXTA, (*Sprengel.*) Nettle-leaved Lantana. A shrub, leaves opposite, ovate, acute, scabrous; flowers reddish, yellow. Native of the W. Indies. *Gra. Cat. B. pl. p.* 156. The leaves have a strong smell of black currants when bruised.

669. L. NIVEA, (*Vent.*) A shrub: native of the W. Indies.—*Hort. Cal. p.* 472.

670. L. β. MUTABILIS, (*Hook.*) A large shrub; flowers smallish, first pale yellow, then rose coloured.—*Hort. Cal. p.* 472.

671. L. ODORATA, (*Linn.*) Sweet-scented Lantana. A small, straggling plant; flowers rose-colored, fragrant. Native of the W. Indies.—*Hort. Cal. p.* 472.

672. L. ALBA, (*Willd.*) White-flowered Lantana. A shrub, leaves opposite, ovate, narrowed in the stalk, acuminated, acutely crenated, pubescent; flowers white, fragrant. Native of South America.

DURANTA. (*Linn.*) After Castor Durantes, a physician and botanist, who died in 1590.

673. D. ELLISIA, (*Linn.*) Ellis' Duranta. A handsome shrub; leaves oblong lanceolate, acuminate; panicles terminal; flowers blue. Native of the W. Indies.

674. D. PLUMIERI, (*Linn.*) Plumier's Duranta. A large shrub; leaves obovate oblong; panicles terminal; flowers small, blue. Native of W. Indies.—*Hort. Cal. p.* 471;

PETREA. Linnæus dedicated this genus to Robert James, Lord Petre, a famous patron of botany, who died in 1742.

675. P. VOLUBILIS, (*Linn.*) Twisting Petrea. A large twining shrub, with beautiful violet coloured flowers. Native of Vera Cruz, and W. Indies.—*Hort. Cal. p.* 471.

II. VITICEÆ.

SYMPHOREMA, (*Roxb.*)

676. S. INVOLUCRATA, (*Roxb.*) Twining shrub: corolla about 7-cleft, stamens 7, alternate with the segments; leaves ovate, nearly glabrous above, pubescent or sub-tomentose beneath; flowers small, white. Forests of Coromandel.—*Wight's Icon. fig.* 362; *Roxb fl. Ind.* II. *p.* 262; *Hort. Cal. p.* 47.

CONGEA, (*Roxb.*)

677. C. AZUREA, (*Wall.*) Blue-flowered Congea. A twining shrub. Martaban.—*Wight's Icon. fig.* 1479.

TECTONA, (*Linn.*) From its name in Malabar, *Tekka.*

678. T. GRANDIS, (*Linn.*) Teak tree. Thaikoo marum, *Tam.* Teka; *Tel.* Tegoon, *Beng.*

Remarks.—The teak is perhaps the most useful of all the timber trees of the Indian Peninsula. Its strength and durability are well known.

For house-building it is the best of woods when it can be procured, owing to its resisting the attacks of white ants from the oily nature of the wood. It is however an expensive kind of timber and except in those countries where it is plentiful, the price is too great to allow of its being used for ordinary pusposes. Great quantities are used on the Western Coast for ship-building, for which it is superior to any other kinds of wood. The Malabar teak is reckoned better than any other. It grows best by the sides of rivers and though not extensively distributed, is found in detached clumps rather than scattered among other trees. In the mountains of Bundlecund it is a very moderate sized tree. Extensive forests of teak are found in Pegu and on the banks of the Irrawaddy. The tree requires 60 to 80 years to reach a proper age and maturity to fit it for ship-building. After the best straight timber has been taken, the crooked pieces called *Shin logs'* are used for many purposes. Teak does not injure iron and is not liable to shrink in width. Flowers smallish, white. Found on the Banks of the Tuptee, and Godavery, the Concans, Malabar, Siam, Java, Bundlecund.—*Roxb. fl. Ind.* I. *p.* 600; *ed. Cary*, II. *p.* 346; *Gra. Cat. B. pl. p.* 158; *Useful plants of India, p.* 425; *Hort. Cal. p.* 470; *Bal. Cyclop. of India.*

PREMNA, (*Linn.*) From *premnon*, a stump of a tree.

679. P. LATIFOLIA, (*Roxb.*) Broad-leaved Premna. Tree; leaves round, cordate, entire, smooth: corymbs axillary and terminal: throat of calx woolly: flowers dirty yellow: drupe size of a pea, erect, wrinkled, 4-celled.

Remarks.—The wood is white and firm, and is used for many economical purposes. The leaves have a strong but not disagreeable odour, and are eaten by the Natives in their curries.—*Roxb. fl. Ind.* III. *p.* 79; *Wight's Icon fig.* 869; *Hort. Cal. p.* 468.

680. P. INTEGRIFOLIA, (*Roxb.*) Entire-leaved Premna. A small tree; flowers in terminal corymbs, small, greenish. The whole plant is used medicinally by the Natives, and the leaves are used by them in soups and curries. Coromandel, Bombay, Moluccas, &c.—*Roxb. fl. Ind.* III. *p.* 81; *Wight's Icon. fig.* 1469; *Gra. Cat. B. pl. p.* 155; P. hircina, *Buch.; Hort. Cal. p.* 468. *Drury, U. P. p.* 365.

681. P. BARBATA, (*Wall.*) A shrub; flowers small, greenish white. The whole plant has a heavy, disagreeable smell, nearly the same as some of the other species of this genus, (*Roxb.*) The leaves are used similarly to those above.—*Hort. Cal. p.* 468; P. serratifolia, *Roxb. fl. Ind.* III. *p.* 77.

CALLICARPA, (*Linn.*) Named in reference to the pretty berries ; from *kalos*, beautiful, and *karpos*, fruit.

682. C. REEVESII, (*Wall.*) A shrub ; flowers small, purplish. Native of China. Introduced from the Calcutta Botanic gardens, 1858.—*Hort. Cal. p.* 467.

VOLKAMERIA, (*Linn.*) In honour of J. G. Volkamer, a German botanist.

683. V. KÆMPFERI, (*Willd.*) Kæmpfer's Volkameria. A shrub, with cordate leaves, and pretty scarlet flowers in terminal panicles. Native of China.—*Roxb. fl. Ind.* III, *p.* 60. Clerodendron squamatum, *Vahl.* ; *Hort. Cal. p.* 466.

CLERODENDRON, (*Linn.*) From *kleros*, lot, and *dendron*, a tree ; in allusion to the uncertain medicinal properties of the species.

684. C. SIPHONANTHUS, (*R. Br.*) Long-tubed Clerodendron. A tall, erect growing, suffruticose plant, with linear leaves ; and flowers greenish white, with very long tube. East Indies.—*Gra. Cat. B. pl. p.* 157 ; *Wight's Illustr. fig.* 173 ; *Hort. Cal. p.* 465 ;—Siphonanthus indicus, *Linn.* ;—*Roxb. fl. Ind.* III. *p.* 67.

685. C. INERME, (*Gærtn.*) Smooth Clerodendron. Shangam-cooppee, *Tam.* A ramous shrub ; scandent when any support is near ; leaves opposite, smooth, shining ; flowers in axillary peduncles ; pure white. Native of New Holland, China, Moluccas, both Peninsulas of India, &c.—*Gra. Cat. B. pl. p.* 157 ; *Roxb. fl. Ind.* III. *Drury, U. P. p.* 140. *p.* 58 ; *Hort. Cal. p.* 465.

686. C. PHLOMOIDES, (*Linn. fil.*) Taloo-dhalei, *Tam.* A large shrub, with ovate, cordate, dentate leaves, and white, fragrant flowers in terminal panicles.—*Gra. Cat. B. pl. p.* 157. *Drury, U. P. p.* 141.

687. C. VISCOSUM, (*Vent.*) Bockada, *Tel.* A shrub with somewhat quadrangular stems ; flowers in large panicles, white with a tinge of red. Both Peninsulas of India, Bengal, Oude, &c.—*Hort. Cal. p.* 465.

C. infortunatum, *Linn.*; *Wight's Icon. fig.* 1471; *Gra. Cat. B. pl. p.* 157. C. infortunata, *Roxb. fl. Ind.* III. *p.* 59. *Drury, U. P. p.* 142.

688. C. FRAGRANS, *plenum.* Double-flowering fragrant Clerodendron. A small, erect growing shrub; flowers large, white, tinged with rose-colour.

689. C. SERRATUM, (*Blumei*) A shrub; young shoots 4 sided; leaves opposite or tern, from 5 to 10 inches long, and broad in proportion, serrated; flowers in terminal panicles, of a pretty pale blue colour, the natives eat them as greens, also the leaves. (*J. Grah.*) East Indies.—*Gra. Cat. B. pl. p.* 157; *Hort. Cal. p.* 466. *Drury, U. P. p.* 141.

690. C. ROSEUM, (*Wall.*) A shrub; flowers pale rose-coloured.

GMELINA, (*Linn.*) In honour of George Gmelin, a celebrated German naturalist and traveller.

691. G. ARBOREA, (*Roxb.*) Tree Gmelina. Goomadee, *Tam.* Tagoomooda, *Tel.* Gumbaree, *Beng.* Joogani-chookur. *Hind. Drury, U. P. p.* 234.

Remarks.—A large timber tree; leaves petioled, cordate, pointed: flowers in April and May, large, sulphur-colour, tinged with brown. The light wood of this tree is used by the natives for making the cylinders of their drums called *Dholucks*, also for making chairs, carriages, pannels, &c. as it combines lightness with strength. Coromandel, Neilgherries, Concan, Oude &c.—*Roxb. fl. Ind.* III. *p.* 84; *Wight's Icon. fig.* 1470; *Gra. Cat. B. pl. p,* 158; *Hort. Cal. p.* 470.]

692. G. ASIATICA, (*Linn.*) Asiatic Gmelina. Neelacoomul, *Tam.* Nelagoomadi, *Tel.* A pretty shrub, with small scolloped leaves, and large yellow flowers, which come out chiefly in October, but more or less throughout the year. It is armed with thorns, and forms an elegant, and excellent hedge. Coromandel.—*Gra. Cat. B. pl. p.* 158; *Roxb. fl. Ind.* III. *p.* 85; *Hort. Cal. p.* 470. *Drury, U. P. p.* 235.

VITEX, (*Linn.*) From *vieo,* to bind, in allusion to the flexible branches.

693. V. TRIFOLIA, (*Linn.*) Three-leaved Vitex. Neer-nochie, *Tam.* Neela vayalie, *Tel.*

Remarks.—A small tree, with ternate and quinate leaves, and smallish, bluish white flowers. The leaves and young shoots are considered as powerfully discutient, and are used in fomentations or simply applied warm in cases of sprains, rheumatism, contusions, &c., also externally in diseases of the skin, and swellings : leaves powdered and taken with water are a cure for intermittent fevers; root, and a cataplasam of the leaves, are applied externally, in rheumatism and local pains. A clear, sweet oil of a greenish colour is extracted from the root. Native of tropical New Holland, Moluccas, Pegu, coromandel, Concans, &c.—*Roxb. fl. Ind.* III. *p.* 69; *Gra. Cat. B. pl. p.* 155; *Hort. Cal. p.* 468. *Drury, U. P. p.* 452.

694. V. NEGUNDO, (*Linn.*) Chaste tree. Vellay nochie, *Tam.* Wayala, *Tel.* Nishinda, *Hind.* Nishinda, *Beng.* A small tree, with quinate leaves, and small, odoriferous, beautiful blue flowers. The medicinal properties are similar to the above species, but somewhat weaker. Native of the Moluccas, Peninsula of India, Bengal, &c.—*Roxb. fl. Ind.* III. *p.* 70; *Wight's Icon. fig.* 519; *Hort. Cal. p.* 469. *Drury, U. P. p.* 452.

695. V. ALATA, (*Roxb.*) Wing-leaved Vitex. A small tree; leaves ternate, petioles winged; flowers in axillary panicles, pale yellow, tinged with blue. This tree yields a good timber.—*Gra. Cat. B. pl. p.* 155; *Roxb. fl. Ind.* III. *p.* 72; *Hort. Cal. p.* 469. *Drury, U. P. p.* 450.

696. V. LEUCOXYLON, (*Roxb.*) A tree; flowers largish, white, the lip of corolla covered with pink hairs.—*Wight's Icon. fig.* 1467.

HOLMSKIOLDIA, *Retz.* In memory of Theodore Holmskiold, a Danish botanical anthor.

697. H. SANGUINEA, (*Retz.*) An elegant shrub; flowers large, orange scarlet or scarlet. Native of China, Silhet, Nepal, &c.—*Gra. Cat. B. pl. p.* 153; *Hort. Cal. p.* 462.

ORDER LXXXVIII. ACANTHACEÆ. R. BROWN.

ACANTHUS TRIBE.

Description.—Herbs or shrubs, with simple, opposite, exstipulate leaves, and bracteated showy flowers. Calyx of 5 sepals, distinct or combined, persistent. Corolla usually irregular, lipped. Stamens 2, or 4 didynamous,

ing plant ; flowers large, ultramarine blue, with a white throat. Introduced from Rangoon.

700. T. FRAGRANS (*Roxb.*) A twining plant, leaves opposite, narrow cordate ; lobed at the base ; flowers large, white, with a sulphur-coloured bottom, inodorous.—*Roxb. fl. Ind.* III. *p.* 33 ; *Gra. Cat. B. pl. p.* 163 ; *Hort. Cal. p.* 481.

701. T. ALATA, (*Hook.*) Winged-leaved Thunbergia. A perennial twining plant, leaves cordate, triangular, sinuately toothed, five nerved ; petioles winged : flowers large, yellow. East Indies.

702. T. β, ALBA. White flowered wing-leaved Thunbergia.

MEYENIA, *Nees.* In honour of W. Meyen, a celebrated physiological botanist.

703. M. HAWTAYNEANA, (*Nees.*) Hawtayne's Meyenia. Shrubby, procumbent, glabrous : leave sessile, cordate, acute. Frequent on the Eastern slopes of the Neilgherries, also on the

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tops of the Anamallei Hills near Coimbatore. The deep purplish blue of the limb of the corolla, and the numerous flowers which open at once, renders this a very conspicuous plant and one well worth cultivation.—*Wight's Icon. fig.* 1487.

HEXACENTRIS, (*Nees.*) From *hex*, six, and *kentron*, a spur.

704. H. COCCINEA, (*Wall.*) Scarlet Hexacentris. A perennial twining plant, leaves cordate entire ; racemes terminal ; flowers largish, intensely red, with a yellow throat. Native of Nepal, and Khassya mountains.

RUELLIA, (*Linn.*) In honour of John Ruelle, of Soissons, botanist and physician to Francis I.

705. R. FORMOSA, (*Andr.*) Handsome Ruellia. A pretty perennial plant ; leaves stalked, entire, ovate, downy ; peduncles axillary, alternate, few flowered, very long ; flowers scarlet. Native of Brazil.

706. R. MACROPHYLLA, (*Vahl.*) A shrubby plant ; leaves ovate, lanceolate, acuminate, entire ; flowers red.

ASYSTASIA, (*Blume.*) Derivation unknown.

707. A. COROMANDELIANA, (*Nees.*) Madras Asystasia. Midday kerry. A suffruticose, scandent plant, with whitish or pale blue purple flowers in terminal racemes. Leaves cordate, entire, rather obtuse, Petioles winged towards the apex. Common every where in hedges.—*Wight's Icon. fig.* 1506 ; *Hort. Cal. p.* 484. Ruellia Zeylanica, *Roxb. fl. Ind.* III. *p.* 42 ; *Gra. Cat. B. pl. p.* 161.

GOLDFUSSIA, (*Nees.*) In compliment to Dr. Goldfuss, professor of Natural history at Bonn upon the Rhine.

708. G. ISOPHYLLA, (*Nees*) Blue-bell Goldfussia. An erect shrubby plant ; flowers pale purplish blue. Native of the Khassya mountains.—*Hort. Cal. p.* 484.

BARLERIA, (*Linn.*) In honour of the Rev. James Barrelier, Dominican, and M. D. of Paris.

709. B. CRISTATA, (*Linn.*) Crested Barleria. A shrubby, unarmed plant ; leave sessile, broad lanceolate ; flowers axillary, of a blue colour with a dash of purple ; the calyx is 4 leaved ; 2 of the leaves much larger than the others, and fringed with bristles. Common in gardens.—*Roxb. fl. Ind.* III. *p.* 37 ; *Wight's Icon. fig.* 453 ; *Gra. Cat. B. pl. p.* 160 ; *Hort. Cal. p.* 485.

710. B. β. ROSEA. Flowers rose-coloured.

711. B. PRIONITIS, (*Linn.*) A shrubby plant, armed with axillary, sharp thorns; flowers axillary, large, orange-coloured. Common. Found in Java, Arabia, Ceylon, both Peninsulas of India, Bengal, &c.—*Roxb. fl. Ind.* III. *p.* 36 ; *Wight's Icon. fig.* 452 ; *Gra. Cat. B. pl. p.* 160 ; *Hort. Cal. p.* 486.

712. B. BUXIFOLIA, (*Linn.*) A low growing thorny shrub, frequent in poor lands and about road sides. The flowers open in the course of the night and generally drop before mid-day, they vary in colour from white to rose colour.—*Wight's Icon. fig.* 870.

713. B. ACUMINATA, (*Wight.*) A shrub ; flowers large, white.—*Wight's Icon. fig.* 450.

714. B. GIBSONI. A handsome, shrubby, erect growing plant ; flowers large, pale blue ; very showy.

ASTERACANTHA, (*Nees.*) From *aster,* a star, and *akantha,* a spine.

715. A. LONGIFOLIA, (*Nees.*) Long-leaved Asteracantha. A herbaceous annual, usually growing in water or marshy places. Flowers light purple or pink, about an inch long.—*Wight's Icon. fig.* 449 ; *Hort. Cal. p.* 485 ; Barleria longifolia, *Linn.* ; *Gra. Cat. B. pl. p.* 161 ; Ruellia longifolia, *Roxb. fl. Ind.* III. *p.* 50.

LEPIDAGATHIS, (*Willd.*) From *lepis,* a scale, and *agathis,* ball ; in allusion to the mode of growth resembling a scaly ball.

716. L. CRISTATA, (*Willd.*) A small, perennial plant, with the inflorescence in a dense imbricated head, close on the ground. Flowers small, rose-colour. Common on waste places. —*Roxb. fl. Ind.* III. p. 53; *Wight's Icon. fig.* 455; *Gra. Cat. B. pl. p.* 160; *Hort. Cal. p.* 486.

CROSSANDRA, (*Salisb.*) From *krossos*, a fringe, and *aner*, a male, or anther; in reference to the anthers being fringed.

717. C. AXILLARIS, (*Nees.*) Axil-flowered Crossandra. A small shrub; young stems somewhat scabrous, leaves quaternate, oblong, glabrous, even; spikes axillary, subsessile, alternate, shorter than the leaves; bracteas pubescently scabrous, margin naked: flowers large, orange scarlet. East Indies.—*Wight's Icon, fig.* 460.

718. C. INFUNDIBULIFORMIS, (*Nees.*) A shrubby plant, with large, orange-coloured flowers. Common in flower-pots about temples, and in gardens.—*Wight's. Icon. fig.* 461; *Hort. Cal. p.* 487; Ruellia infundibuliformis, *Andr.*; *Roxb. fl. Ind.* III. *p.* 41; *Gra. Cat. B. pl. p.* 161.

APHELANDRA, (*R. Brown.*) From *apheles*, simple, and *aner*, a male; the anthers being one celled.

719. A. CRISTATA, (*H. K.*) Dense-spiked Aphelandra. A shrub; flowers scarlet, in terminal spikes. Native of the West Indies.

GRAPTOPHYLLUM, (*Nees.*)

720. G. HORTENSE, (*Nees.*) Painted Justicia. A common shrub in gardens, and easily raised from cutting; flowers largish, crimson. There are several varieties, with green leaves; green, with large white spots; green tinged with red; dark red; &c.—*Hort, Cal. p.* 488; Justicia picta, *Linn.*; *Roxb. fl. Ind.* I. *p.* 117; *ed. Cary,* I. *p.* 118; *Gra. Cat. B. pl. p.* 163.

ADHATODA, (*Nees.*) A Malabar name.

721. A. VASICA, (*Nees.*) Malabar nut. Adathodei, *Tam.*

Adasara, *Tel.* Bakus, Basoka, *Beng.* Arus, Asgranda, *Hind.*

A shrub, leaves opposite, lanceolate, flowers on short terminal spikes, white, tinged with sulphur at the throat, and at the limb with dark purple lines and spots. Wood soft, considered good for making charcoal for gunpowder. Flowers, leaves, root, and especially the fruit, are considered antispasmodic, and are given in cases of asthma and intermittent fever. Common.—*Hort. Cal. p.* 488; Justicia Adhatoda, *Linn*; *Roxb. fl. Ind*, I. *p.* 126; *ed. Cary*, I. *p.* 127; *Gra. Cat. B. pl. p.* 164.

GENDARUSSA, (*Rumph.*) An alteration of the Indian name.

722. G. VULGARIS. (*Nees.*) Common Gendarussa. Shrubby: spikes terminal, flowers somewhat whorled, leafy at the base; bracteas small: leaves lanceolate, glabrous. (*Nees.*) Flowers pale greenish white, sparingly stained with purple. Common. *Wight's Icon. fig.* 468; *Hort. Cal. p.* 489; Justicia Gendarussa. *Linn.*; *Roxb. fl. Ind.* I. *p.* 128; *ed. Cary*, I. *p.* 129. *Gra. Cat. B. pl. p.* 164.

JUSTICIA, (*Linn.*) In honour of J. Justice, an eminent Scotch horticulturist and botanist.

723. J. COCCINEA, (*Aubl.*) Scarlet Justicia. A shrubby plant; spikes terminal, flowers scarlet. Native of South America.

RHINACANTHUS. (*Nees.*) From *rhin*, a snout, and *anthos*, a flower; or *akantha*, a spine; alluding to the appearance of the corolla.

724. R. COMMUNIS, (*Nees.*) Common Rhinacanthus. A shrubby, poor looking plant, with white flowers in axillary and terminal panicles. Common in gardens.—*Wight's Icon. fig.* 464; *Hort. Cal. p.* 490; Justicia Nasuta, *Linn.*; *Roxb. fl. Ind.* I, p. 120; *ed. Cary*, I, 121; *Gra. Cat. B. pl. p.* 164.

ERANTHEMUM, (*Linn.*) From *ear*, spring, and *anthos*, a flower; applied by the ancients to their Anthemis.

725. E. PULCHELLUM, (*Andr.*) Fair Eranthemum. A shrubby plant, with beautiful, bright purple-coloured flowers, in terminal imbricated spikes. East Indies.

726. E. BICOLOR, *(Schrank,)* A small shrubby plant flowers white, streaked with red. Native of Luconia.

727. E. MONTANUM, (*R. W.*) Alpine Eranthemum. A shrubby plant ; flowers light purple. Ceylon.—*Wight's Icon fig.* 466.

RUNGIA, (*Nees.*)

728. R. REPENS, (*Nees.*) Creeping Rungia. A herbaceous diffuse plant ; flowers small, pale rose-coloured. Ceylon, Peninsula of India, &c.—*Wight's Icon. fig.* 465 ; *Hort. Cal. p.* 492 Justicia repens, *Linn.* ; *Roxb. fl. Ind.* I. *p.* 132 ; *ed. Cary,* I. *p* 133 ; *Gra. Cat. B. pl. p.* 165.

ANDROGRAPHIS, *(Wall.)* So named from *aner*, a man, and *grapho,* to write.

729. A. PANICULATA, (*Wall.*) Panicled Andrographis. Nela-vembu, *Tam.* Nella-vemo, *Tel.* Kalupnath, Mahatita, *Hind.* Kala-megh, *Beng.* Herbaceous, glabrous : leaves lanceolate, attenuated into a petiole : racemes axillary, bifid, or dichotomous : capsule many seeded : flowers small, white, streaked with purple. This plant is much used by the Natives in medicine. It is an ingredient in the preparation of the French Drogue amere.—*Wight's Icon. fig.* 518 ; *Hort. Cal. p.* 493 ; Justicia paniculata, *Linn.* ; *Roxb. fl. Ind.* I. *p.* 117 ; *ed. Cary.* I. *p.* 119 ; *Gra. Cat. B. pl. p.* 164.

ORDER LXXXIX. PLUMBAGINACEÆ, LINDL:

LEAD-WORT TRIBE.

Description.—Herbs or undershrubs, with alternate or clustered, entire, exstipulate leaves, which are somewhat sheathing, and flowers in panicles or heads. Calyx tubular, plaited, persistent. Corolla salver-shaped, with a 5-parted limb, or composed of 5 unguiculate petals. Stamens opposite the lobes of the gamopetalous corolla, and hypogynous or attached to the claws of the polypetalous corolla. Ovary superior, 1-celled, with a single ovule, pendulous from a long funiculus which arises from the base of the cell : styles 5, separate or partially united. Fruit a utricle, or opening by 5 valves. Seeds inverted, albuminous.

Distribution.—Found in salt marshes and on the sea-coasts of temperate

Properties.—The species have tonic, astringent, and acrid properties; some cause blistering.—*Balfour's Outlines of Botany, p.* 469; *Lindl. V. K.* 1640.

PLUMBAGO, (*Linn.*) From *plumbum*, a disorder in the eyes, which appears to have been the same as what we call *cataract*; and which some species were formerly said to cure.

730. P. ZEYLANICA, (*Linn.*) White-flowered Lead-wort. Chitramoolum, or Kodivaylie, *Tam.* Chita, *Hind.* Chitra, *Beng.*

Remarks.—A perennial, suffruticose plant, with white flowers in racemes, which are covered with a kind of glutinous hair. The fresh bruised bark of the root is sometimes used for raising blisters. Common in hedges and prickly-pear bushes.—*Gra. Cat. B. pl. p.* 166; *Roxb. fl. Ind. I. p.* 463; *ed. Cary,* II. *p.* 38; *Wight's Illustr. fig.* 179; *Hort. Cal. p.* 438.

731. P. ROSEA, (*Linn.*) Rose-coloured Lead-wort. Shencodic vaylie, *Tam.* Yerracithra moolum, *Tel.* Rukto chita, *Beng.* A perennial, shrubby plant; flowers largish, bright red. Native of the Moluccas, both Peninsulas of India. Common in gardens.—*Roxb. fl. Ind.* I. *p.* 463; *ed. Cary.* II. *p.* 38; *Gra. Cat. B. pl. p.* 166; *Hort. Cal. p.* 439.

732. P. CAPENSIS. (*Thunb.*) Blue-flowered Lead-wort. A small, shrubby plant, with pale blue flowers. In flower more or less the whole year. Native of the Cape of Good Hope.—*Hort. Cal. p.* 439.

ORDER XC. PLANTAGINACEÆ, LINDL.

RIB-GRASS TRIBE.

Description.—Herbs, having usually ribbed and radical leaves, with spiked, occasionally unisexual flowers. Calyx 4-parted, persistent. Corolla scarious and persistent, 4-parted. Stamens 4, alternate with the corolline segments; filaments long and slender. Ovary of one carpel, 2 rarely 4-celled by placental prolongations; style 1. Fruit a membranous pyxis with a free placenta, seeds 1, 2, or many, albuminous.

Distribution.—The plants are generally distributed, but are chiefly natives of temperate climates. Known species 120.

Properties.—They have bitter and astringent qualities. The seed of some are demulcent.—*Balfour's Outlines of Botany, p.* 469; *Lindl. V. K.* p. 642.

PLANTAGO, (*Linn.*) Derived from *planta*, the sole of the foot; resemblance in the leaves.

occasionally unisexual. Perianth of 3-5 scarious sepals. Stamens 5, hypogynous, distinct or monadelphous ; anthers often 1-celled. In other respects resembling Chenopodiaceæ.

Distribution.—Many of the plants of this order are common tropical weeds, most abundant in tropical America and Asia ; a few are found in temperate regions. Known species 486.

Properties.—Under the species.—*Balfour's Outlines of Botany, p.* 470 ; *Lindl. V. K. p.* 510.

CELOSIA, (*Linn.*) From *kelos*, burnt ; the flowers of some of the species appear as it were singed or burnt.

740. C. ARGENTEA, (*Linn.*) Silver-spiked Cocks-comb. An annual ; erect, with oblong lanceolate leaves, and small white flowers, in subcylindric spikes. Common every where during the cold weather.—*Roxb. fl. Ind.* I. *p.* 678 ; *ed. Cary,* II, *p.* 507 ; *Gra. Cat. B. pl. p.* 167 ; *Wight's Icon. fig.* 1767 ; *Hort. Cal. p.* 318.

741. C. CRISTATA, (*Linn.*) Common Cocks-comb. Annual, erect ; leaves oblong-ovate, peduncled, round, striated : spikes oblong : flowers red or purple. Native of Japan, China. Commonly cultivated in gardens.—*Roxb. fl. Ind.* I, *p.* 679 ; *ed. Cary,* II *p.* 508, *Gra. Cat. B. pl. p.* 168 ; *Hort. Cal. p.* 318.

AMARANTHUS, (*Linn.*) Derived from *a* privative and *mairaino*, to wither ; in reference to the length of time some of the flowers retain their bright colours.

742. A. TENUIFOLIUS, (*Willd.*) Fine-leaved Amaranth. An annual, diffuse plant ; flowers minute, green. Common everywhere. Leaves used as greens.—*Roxb. fl. Ind.* III. *p.* 602 ; *Gra. Cat. B. pl. p.* 169 ; *Wight's Icon. fig.* 718.

743. A. POLYGAMUS, (*Linn.*) Common Bajee. Mollei keerei, *Tam.* Dayla-kura, *Tel.* Champa-unti, *Beng.* A diffuse plant, with rhomb-ovate leaves : flowers minute, greenish. Cultivated all over the southern parts of Asia. When young the whole plant is used as spinage.—*Roxb. fl. Ind.* III *p.* 603 ; *Gra. Cat. B. pl. d.* 169 ; *Wight's Icon. fig.* 714 ; *Hort. Cal. p.* 315.

A. β. *ruber*, red variety of the above.

744. A. OLERACEUS, (*Linn.*) Koolla Thundoo-keerei, *Tam.* Thota-kura, *Tel.* An annual. Several varieties are cultivated as pot-herbs, of which the following are the most remarkable :—

a. viridis ; the common green sort, most cultivated.

b. ruber ; a beautiful variety, with a clear bright red stem, branches, petioles, nerves, and veins, and the leaves themselves, rather rust-coloured.

c. albus ; all the parts that are red in *b*, are here of a clear, shining, white colour. Much cultivated in Bengal.—*Hort. Cal. p.* 316.

745. A. TRICOLOR, (*Linn.*) Three-coloured Amaranth. An erect growing plant, from 2 to 3 feet high ; leaves variegated. The bright colour of the leaves renders this plant a conspicuous object in the flower borders. Native of China.—*Roxb. fl. Ind.* III. *p.* 668 ; *Gra. Cat. B. pl. p.* 169 ; *Hort. Cal. p.* 316.

746. A. SPINOSUS, (*Linn.*) Spined Amaranth. Moolloo-keerei, *Tam.* An annual ; erect, ramous, round, with sharp spines on the axils of the leaves ; spikes terminal, simple, with sessile axillary glomerules ; minute, green. A very troublesome weed, leaves used as greens.—*Roxb. fl. Ind.* III. *p.* 611 ; *Wight's Icon. fig.* 513.

747. A. CAUDATUS, (*Linn.*) Love lies bleeding. Annual ; a highly ornamental plant ; flowers small, pale red. Native of Persia, common in gardens.—*Gra. Cat. B. pl. p.* 169 ; *Hort. Cal. p.* 317.

748. A. HYPOCHONDRIACUS, (*Linn.*) Prince's Feather. An annual ; flowers minute, deep red. Native of Virginia.—*Hort. Cal. p.* 317.

749. A. TRISTIS, (*Linn.*) Kooppei-keeray. An annual. Cultivated all over India ; flowers minute green.—*Roxb. fl. Ind.* III. *p.* 604 ; *Gra. Cat. B. pl. p.*169 ; *Wight's Icon. fig.* 514 ; *Hort. Cal. p.* 315.

ÆRUA, (*Forsk.*) Taken from *eroua*, its Arabic name.

750. Æ. LANATA, (*Juss.*) Woolly Ærua. Kunn-pooléi keerei, *Tam.* A common weed with woolly silvery looking leaves, and oval heads of white flowers. The leaves are used along with others, as mixed greens, not eaten alone. (*Jaffrey.*)—*Gra. Cat. B. pl. p.* 168; *Hort. Cal. p.* 317; *Wight's Icon. fig.* 723; Achyranthes lanata, *Linn.*; *Roxb. fl. Ind.* I. *p.* 676; *ed. Cary*, II. *p.* 503.

751. Æ. JAVANICA, (*Juss.*) Javanese Ærua. Perennial; stem erect, and, like the oblong obtuse, pale greenish leaves, clothed with woolly tomentum: spikes cylindrical, crowded, towards the ends of the branches, villously tomentose. Common. Native of Arabia, Ceylon, Peninsula of India, Java, &c.—*Wight's Icon. fig.* 876; *Hort. Cal. p.* 317; Achyranthes incana.—*Roxb. fl. Ind.* I. *p.* 671; *ed. Cary*, II. *p.* 495.

ACHYRANTHES, (*Linn.*) *achuron*, chaff, and *anthos*, a flower; in allusion to the chaffy nature of the floral leaves.

752. A. ASPERA, (*Linn.*) Rough Chaff-flower. Nahi-ooroovie, *Tam.* Ooteraynie, *Tel.* Lal chirchiri, *Hind.* Upanga, *Beng.*

Remarks.—A troublesome weed, common in every part of India, chiefly in the rainy and cold season, but in some measure all the year. In some parts of India, the natives use the root as a tooth-brush, the seeds are given in hydrophobia, and in cases of snake-bites, as well as in opthalmia, and cutaneous diseases. The flowering spikes rubbed with a little sugar are made into pills and given internally to people bitten by mad dogs. The leaves taken fresh and rubbed to a pulp are considered a good remedy applied externally in scorpion-stings. The ashes of the burnt plant mixed with conjee is a native remedy in dropsical cases.—*Roxb. fl. Ind.* I. *p.* 672; *ed. Cary*, II, *p.* 496; *Wight's Icon. fig.* 1777; *Gra. Cat. B. pl. p.* 168; *Hort. Cal. p.* 318; *Useful plants of India, page*, 11.

DESMOCHÆTA, (*Decandolle.*) From *desmos*, a bond, and *chaite*, a hair; in allusion to the coherence of the flowers.

753. D. MURICATA. (*D. C.*) Annual, diffuse: leaves alternate, ovate-oblong: spikes axillary, longer than the leaves; two variously horned bodies between the corolla and calyx:

nectary none. A very common procumbent plant frequent in cultivated ground. The leaves and tender tops are used by the natives in their curries.—*Wight's Icon. fig.* 732 ; Achryanthes alternifolia.—*Roxb. fl. Ind.* I. *p.* 674.

GOMPHRENA, (*Linn.*) From *gomphos,* a club ; alluding to the shape of the flowers.

754. G. GLOBOSA, (*Linn.*) Globe Amaranth or Bachelor's Buttons. Annual; common in every garden. The flowers are in heads, and look much like *red clover.* The native women wear them in their hair. In Catholic Europe they are used for decorating churches. Probably this is Milton's

> "Immortal amarant, a flower which once
> In paradise, fast by the tree of life,
> Began to bloom."
>
> *Paradise Lost. Book* III.

Gra. Cat. B. pl. p. 169.

754. G. *β.* ALBA ; White-flowered Globe Amaranth.

ALTERNANTHERA, (*Forsk.*) The name refers to the stamens being alternately fertile and barren.

755. A. SESSILIS, (*R. Br.*) Poonanghinnee-keerei, *Tam.* Annual, creeping : leaves opposite, sessile, lanceolate, smooth : flowers triandrous : capsule winged. A common weed usually found in moist or even marshy soils ; in such situations flowering at all seasons.—*Wight's Icon. fig.* 727; *Gra. Cat. B. pl. p.* 168 ; *Hort. Cal. p.* 318 ; Achyranthes triandra, *Roxb. fl. Ind.* I. *p.* 678 ; *ed. Cary,* I. *p.* 505.

ORDER XCIII. CHENOPODIACEÆ, LINDL.

GOOSE-FOOT TRIBE.

Description.—Herbs or undershrubs, with exstipulate, alternate, and occasionally opposite leaves : and small herbaceous, often unisexual flowers ; perianth divided deeply, sometimes tubular at the base, persistent ; stamens inserted into the base of the perianth, and opposite to its divisions. Ovary free, 1-celled, with a single ovule attached to its base. Fruit a utricle or achene, sometimes succulent. Embryo coiled round mealy albumen, or spiral without albumen.

Distribution.—Weeds inhabiting waste places in all parts of the world, but unlike Amaranths, abounding least within the Tropics, and most in extratropical regions, they are exceedingly common in all the Northern parts of Europe and Asia, and are frequent inhabitants of salt marshes Species 510.

Properties.—Many of the plants of this order are used as pot-herbs, for instance Spinage, Garden Orach. and Beet. Soda is supplied by some of the species of *Salicornia* and *Salsola* growing on the sea coasts. Anthelmintic and antispasmodic properties are also met with in the order—*Balfour's Outlines of Botany, p.* 470; *Lindl. V. K. p.* 512.

SPINACIA, (*Tournef.*) From *spina*, a prickle, in allusion to the prickly processes of the fruit.

756. S. OLERACEA, (*Linn.*) Common Spinage. An annual; flowers small, green. Native of Arabia.

BETA, (*Tournef.*) From the Celtic *bett*, signifying red; alluding to the red colour of the roots.

757. B. VULGARIS, (*Linn.*) Common Beet. A well known esculent root, used in salads, as a pickle, and preserved as a comfiture; the best are the small varieties. (*Jaffrey.*) Flowers small, green. Native of S. Europe, N. Africa, and middle Asia.—*Hort. Cal. p*: 320.

BASELLA, (*Linn.*) Its Malabar name.

758. B. ALBA, (*Linn.*) Malabar Nightshade. Allubatsalla, *Tel.* Poi, *Hind.* Sufed-pooin, *Beng.* Stem twining, perennial: leaves ovate, undulated: spikes peduncled, simple. This is a common plant occurring in every part of the country; the succulent leaves are dressed and eat like spinage.—*Wight's Icon. fig.* 896; *Roxb. fl. Ind.* II. *p.* 104; *Gra. Cat. B. pl. p.* 170; *Hort Cal. p.* 322.

759. B. CORDIFOLIA. (*Linn.*) Heart-leaved Basella. Peddabatsalla, *Tel.* Pooin, *Hind.* Pooin-shak, *Beng.* Twining, perennial; leaves cordate, smooth, entire: flowers small, rose-coloured. A native of most parts of India, and cultivated as a pot-herb.—*Roxb. fl. Ind.* II. *p.* 105; *Hort. Cal. p.* 322, B. lucida, *Linn.*

ORDER XCIV. PHYTOLACCACEÆ. LINDL.

POKE-WEED TRIBE.

Description.—Herbs or undershrubs, with alternate, exstipulate, often dotted leaves, and racemose flowers. Perianth of 4-5 leaves, often petaloid. Stamens hypogynous or nearly so, indefinite, or 4-5 and then alternate with divisions of the perianth. Ovary of one or many united one-seeded carpels; styles and stigmas distinct. Fruit either succulent or dry. Embryo curved round mealy albumen.

Distribution.—Many are natives of either America; within or without the tropics; others of Africa and India.

Properties.—They have acrid, emetic and purgative qualities. The berries of *Phytolacca decandra*, Poke or pocan, yield a purple juice.—*Balfour's Outlines of Botany, p.* 471; *Lindl. V. K. p.* 508.

RIVINA, (*Plum.*) In honour of A. Q. Rivinus, a botanist of Saxony.

760. R. LÆVIS, (*Linn.*) Smooth Rivinus.* A small shrubby plant, with ovate, wavy leaves, and small, white flowers: berries bright red. Native of the W. Indies. Domesticated about Madras, and other parts of India.—*Hort. Cal. p.* 323.

GISEKIA, (*Linn.*) In honour of Giseke, a Danish botanist.

761. G. PHARNACIOIDES, (*Linn.*) Chickweed-like Gisekia. Procumbent, very diffuse: leaves succulent, obovate lanceolate, obtuse: flowers axillary, aggregated, short pedicelled. A very common weed growing in pasture ground and about old walls; in flower at all seasons but especially during the hot months.—*Wight's Icon. fig.* 1167; *Hort. Cal. p.* 324.

ORDER XCV. POLYGONACEÆ. LINDL.

BUCK-WHEAT TRIBE.

Description.—Herbs, rarely shrubs, with alternate leaves, ochreate stipules, and occasionally unisexual flowers. Perianth often coloured. Stamens definite, and inserted into the base of the perianth. Ovary formed of 3 carpels, 1-celled, containing a single orthotropal ovule. Fruit a triangular nut, often covered by the perianth. Embryo usually on one side of mealy albumen.

Distribution.—The plants of this order are generally distributed both in cold and warm climates. Known species, 500.

Properties.—Acid, astringent and purgative qualities are met with in the plants of this order. *Fagopyrum esculentum*, and other species are cultivated as buck wheat. Species of *Rheum* yield the different kinds of Rhubarb. *R. palmatum* is generally said to be the plant which supplies

* [According to Sir Joseph Paxton, the flowers are *pink*.]

Russian or Turkey Rhubarb, and that *R. Emodi* and *Webbianum* furnish the Rhubarb used in India.—*Balfour's Outlines of Botany, p.* 471; *Lindl. V. K. p.* 502.

RUMEX, (*Linn.*) From *rumo,* to suck; in allusion to the practice among the Romans of sucking the leaves to allay thirst.

762. R. VESICARIUS, (*Linn.*) Country Sorrel. Chookaunkeerei, *Tam.* Chook-palung. An annual; flowers small, reddish. Native of Africa. Cultivated in gardens all over Asia for culi nary and medicinal purposes.—*Roxb. fl. Ind.* II. *p.* 209; *Gra. Cat. B. pl. p.* 172; *Hort. Cal. p.* 326.

763. R. ACETOSA, (*Linn.*) Sorrel. Perennial. Native of Europe.—*Hort Cal. p.* 327.

ORDER XCVI. BEGONIACEÆ, R. BROWN.
BEGONIA TRIBE.

Description.—Herbs or succulent undershrubs, with alternate oblique stipulate leaves, and cymose, pink, unisexual flowers. Perianth superior, colored, with 4 divisions in the male flower, and 5-8 in the female. Stamens indefinite, distinct or united; anthers collected into a head. Ovary winged, 3-celled, with 3 placentas meeting in the axis. Fruit capsular, winged, 3-celled. Seeds indefinite, exalbuminous, reticulated.

Distribution.—Native of the West Indies, South America, and the East Indies. Species 160.

Properties.—They are said to have bitter and astringent properties. —*Balfour's Outlines of Botany, p.* 472; *Lindl. V. K. p.* 318.

BEGONIA, (*Linn.*) In honour of Michel Begon, a Frenchman, and promoter of Botany.

764. B. NITIDA, (*Ait.*) Shining-leaved Begonia. Shrubby, erect; leaves unequally cordate, obsoletely toothed: flowers smallish, white. Native of Jamaica.—*Hort. Cal. p.* 65.

765. B. DICHOTOMA, (*Willd.*) Forked Begonia. Shrubby, erect; leaves unequally cordate, subangular, toothletted, smooth, hairy beneath at the veins: panicles dichotomous: flowers white. Native of the Caraccas.

766. B. ODORATA. (*Willd.*) Sweet-scented Begonia. Shrubby: leaves accuminated, somewhat angular, unequally obsoletely toothletted, smooth on each side: flowers smallish, white, fragrant.

767. B. DIPETALA, (*Graham.*) Two-petaled Begonia. Shrubby, erect: leaves semi-cordate, somewhat angled, acute, doubly serrate, smoothish: stipules semi-cordate: flowers dipetalous, wings of the capsule about equal, roundish. Neilgherries, Bombay.—*Wight's Icon. fig.* 1813,

768. B. FUCHSIOIDES, (*Hook.*) Fuchsia-like Begonia. Shrubby, erect, branched, smooth: leaves semi-ovate, obliquely falcate, acute, serrated, ciliated: panicle pendent: male flowers of 4 conniving petals, 2 outer ones largest, and boat-shaped; female flowers of 5 conniving petals: pedicels triquetrous; third wing of capsule subdeltoid roundish; the other 2 smaller: flowers smallish, scarlet. Native of New Grenada.

769. B. RENIFORMIS, (*Dry.*) Kidney shaped-leaved Begonia. Suffruticose: leaves unequally reniform, clothed with a rusty tomentum beneath: two of the wings of fruit obtuse, the third large and acute; flowers small, white. Native of Brazil.

770. B. UNDULATA, (*Schott.*) Wavy leaved Begonia. Shrubby, erect, leaves nearly sessile, unequally oblong-cordate, undulately repand, entire, glabrous, shining: cymes dichotomous: wings of capsule rounded, equal: flowers smallish, white. Native of Brazil.

ORDER XCVII. LAURACEÆ, LINDL.

LAUREL TRIBE.

Description.—Trees with exstipulate, usually alternate, dotted leaves Perianth 4-cleft, or 6-cleft in 2 rows. Stamens often 8-12, the 3 or 4 innermost being abortive staminodia, and the outer fertile; filament sometimes bearing glands, anthers 2-4-celled, opening by recurved valves. Ovary superior, 1-celled, with 1 or 2 pendulous ovules. Fruit a berry or drupe; pedicel often thickened; seed solitary, exalbuminous; embryo with large cotyledons.

Distribution.—Trees inhabiting cool places in the tropics of either hemisphere, in a very few instances only, straggling to the northward in North America and Europe, on the latter continent. Laurus nobilis is the only species found in a wild state. Known species 450.

Properties.—The species of this extensive order are in all cases more or less aromatic and fragrant; some are valuable for timber, others bear fruit that partake of the quality of the nutmeg, a certain number are useful febrifuges, and some yield a fixed as well as volatile oil, and an

abundance of camphor.—*Balfour's Outlines of Botany, p.* 472 ; *Lindl. V. K. p.* 535.

PERSEA, (*Gærtner.*) A name applied by Theophrastus to an Egyptian tree.

771. P. GRATISSIMA, (*Gærtn.*) Alligator Pear. Avocado Pear. Subaltern's Butter. A small tree : leaves ovate, oblong, or obovate, somewhat acute at both ends, reticulated, pubescent beneath, 9-nerved (novem costatis), glaucous; lobes of the perianth about equal, oblong : ovary glabrous: berry large pear-shaped. The fruit is much esteemed in the West Indies. In taste it is said to resemble the peach, but to be much more agreeable, though not so sweet. It is sometimes eaten with pepper and salt, but more frequently with a little sugar and lime juice. Native of tropical America. Cultivated in India.—*Wight's Icon. fig.* 1823 ; *Hort. Cal. p.* 309.

ORDER XCVIII. MYRISTICACEÆ, LINDL.

NUTMEG TRIBE.

Description.—Tropical trees, with alternate, exstipulate leaves, and unisexual flowers. Perianth 3-4-cleft, valvate. Stamens 3-12, distinct or monadelphous ; anthers extrorse, often united. In the female flowers, the perianth is deciduous. Carpels 1 or many, each with a single erect anatropal ovule. Fruit succulent, 2-valved. Albumen ruminate. Some regard this order as an apetalous unisexual form of Anonaceæ.

Distribution.—Natives exclusively of the tropics of India and America, and most common in the former. Species 44.

Properties.—The plants of this order are acrid and aromatic. Their bark yields a red juice.—*Balfour's Outlines of Botany, p.* 474 ; *Lindl. V. K. p.* 301.

MYRISTICA, (*Linn.*) From *myristikos*, sweet smelling ; odour of the fruit.

772. M. MOSCHATA, (*Thunb.*) Common Nutmeg.

Remarks.—A small tree, from 20 to 25 feet high. Native of the Moluccas and other Eastern Islands, where it is much cultivated for the sake of its well known spicy fruit. The fruit consists of the fleshy pericarp, which, when ripe, splits or dehisces into two halves, showing inside the nut or nutmeg enclosed in an arillode, which is the Mace. The external portion of the fruit is not used, except occasionally as a preserve. The arillode and the enclosed nut are both valuable spices. The nut contains a volatile as well as a fixed oil.—*Roxb. fl. Ind.* III. *p.* 834 ; *Gra. Cat. B. pl. p.* 175 ; *Hort. Cal. p.* 12.

ORDER XCIX. PROTEACÆ, Juss.

PROTEA TRIBE.

Description.—Shrubs or small trees, with hard, dry, exstipulate leaves. Perianth divided into 4, valvate. Stamens 4, placed on the segments of the perianth. Ovary of one superior carpel, containing one or more ovules; fruit dehiscent or closed. Seed exalbuminous; embryo straight.

Distribution.—Natives of Australia and the Cape of Good Hope chiefly. Known species 650.—*Balfour's Outlines of Botany, p.* 474; *Lindl. V. K. p.* 532.

Properties.—Unimportant.

GREVILLEA, (*R. Brown.*) In honour of C. F. Greville, a patron of Botany.

773. G. ROBUSTA, (*Cunn.*) Dr. Greville's tree. A handsome tree: leave alternate, pinnatifid, segments acute, smooth and shining above, hoary beneath: flowers orange-coloured. Native of New Holland.

ORDER C. SANTALACEÆ, R. BROWN.

SANDAL-WOOD TRIBE.

Description.—Trees, shrubs, or herbs, with alternate, entire, exstipulate leaves and small flowers, sometimes unisexual. Perianth adherent, 4-5-cleft, valvate. Stamens 4-5, inserted into the throat of the perianth, opposite its segments. Ovary 1-celled; ovules 1-4; placenta central. Fruit monospermal, dry or succulent. Seed albuminous.

Distribution.—The species are found in Europe and North America, in the form of little obscure weeds; in Holland, the East Indies and the South Sea Islands, as shrubs or small trees. Known species 110.

Properties.—Some of the species are astringent, others yield edible fruit.—*Balfour's Outlines of Botany, p.* 176; *Lindl. V. K. p.* 787.

SANTALUM, (*Linn.*) From its Persian name *sandul*, signifying useful.

774. S. ALBUM, (*Linn.*) Sandal-wood Tree. Chandanum, *Tam. Tel.* Chundoie, *Hind.* Chundum, *Beng*: Tree 20-25 feet: branches numerous, much dividing and spreading and forming nearly spherical heads: leaves opposite on short petioles oblong, smooth, entire, glaucous below: thyrse axillary and terminal, shorter than the leaves: pedicels opposite, lower pair of each thyrse usually 3-flowered: flowers numerous, small, first

straw coloured, afterwards deep ferruginous purple, inodorous: calyx campanulate, 4-cleft: corolla none: berry round, smooth, black when ripe, succulent, crowned with the calyx, 1-celled: nut solitary—*Roxb. fl. Ind.* I. *p.* 442; *ed. Cary,* I. *p.* 462.

Remarks.—This tree yields the Sandal-wood of commerce, which is usually cut into billets and disposed of in that state. It is burnt to perfume temples and dwelling houses both in China and India. Reduced to powder it enters into a composition for marking the forehead. (*J. Grah.*) The Mahomedans express a precious oil from the moist yellow part of the wood, which they value as a perfume. The powdered wood mixed with butter is applied to the head in headaches. Internally it is given in fevers and bilious affections, and used externally in prickly heat and cutaneous eruptions.—*Gra. Cat. B. pl.* p. 177; *Hort. Cal.* p. 303.

ORDER CI. ARISTOLOCHIACEÆ, JUSS.

BIRTH-WORT TRIBE.

Description.—Herbs or climbing shrubby plants, with alternate leaves, solitary or clustered brown or greenish coloured hermaphrodite flowers, and wood arranged in separable wedges. Perianth tubular, adherent, valvate. Stamens 6-12, epigynous, distinct or adherent to the style and stigmas. Ovary 3-6-celled; ovules indefinite; stigmas radiating. Fruit a 3-6-celled polyspermal capsule or berry. Seeds albuminous; embryo minute.

Distribution.—Found in various parts of the world, but abundant in the tropical parts of South America. Known species 130.

Properties.—Birth-worts have pungent, aromatic, stimulant, and tonic properties.—*Balfour's Outlines of Botany, p.* 476; *Lindl. V. K. p.* 792.

ARISTOLOCHIA, (*Linn.*) So named from *aristos,* best, and *locheia,* parturition, its supposed medical qualities.

775. A. LABIOSA, (*Ker.*) Long-lipped Birth-wort. A twining plant, with reniform roundish cordate leaves, and large purple flowers spotted with green and yellow. Native of Brazil.

776. A. BRACTEATA, (*Roxb.*) Worm-killer. Adoo-thinnampalei, *Tam.* Gadida-gudda-pa, *Tel.* Keeda-māree, *Hind.*

Trailing: roots perennial, fibrous; stems striated, waved; leaves alternate, petioled, kidney-shaped, curled at the margin, glaucous below; petioles channelled: flowers axillary, solitary, peduncled, drooping: calyx with upper part of the tube and tongue erect: colour dark purple: covered on the inside with purple hair: capsule ovate.

Remarks.—Every part of this plant is nauseously bitter. In cases of gripes, two of the fresh leaves are rubbed up with water and given once in 24 hours. An infusion of the dried leaves is given as an anthelmintic; fresh bruised and mixed with castor oil, they are considered a valuable remedy in obstinate cases of itch. The leaves beaten up with water are given internally in cases of snake-bites: also in infusion for boils and inflammatory attacks. Coromandel, in cultivated places. Travancore, Banks of the Jumna.—*Roxb. fl. Ind. III. p.* 490; *Gra. Cat. B. pl. p.* 178; *Useful Plants of India, p.* 50; *Hort. Cal. p.* 313.

777. A. INDICA, (*Linn.*) Indian Birth-wort. Perumarundoo, Thalei-shooroolee, *Tam.* Doolagovila, Eesara, *Tel.* Ishwurmool, *Beng.* Esrabel, *Hind.*

Remarks.—A perennial twining plant, with cordate, wedge-shaped leaves, and largish, brownish red flowers. The root is nauseously bitter, and is said to be a valuable antidote to snake-bites, being applied both externally and internally, mixed with honey, the root is given in white leprosy, and the leaves internally in fever. Coromandel, Travancore, Bengal, Bombay, &c.—*Roxb. fl. Ind.* III. *p.* 489; *Gra. Cat. B. pl. p.* 178; *Hort. Cal. p.* 313; *&c.*

ORDER CII. EUPHORBIACEÆ. AD. JUSS.

SPURGE-WORT TRIBE.

Description.—Trees, shrubs, or herbs, with opposite or alternate, often stipulate leaves, and involucrate, unisexual, sometimes achlamydeous flowers. Perianth, when present, inferior, lobed, with glandular, scaly, or petaloid appendages. Stamens definite or indefinite, separate or united in one or more bundles. Ovary 1, 2, or 3 or more celled; ovules 1 or 2, suspended. Fruit usually tricoccous, the carpels separating with elasticity, sometimes fleshy and indehiscent. Seeds albuminous, often arillate. Embryo with a superior radicle.

Distribution.—The plants abound in equinoctial America; some are found in North America, Africa, India, and Europe. Known species, 2500.

Properties.—The plants of this order are generally acrid and poisonous, abounding in milky juice. Starchy matter is procured from many of the species, as well as oils and caoutchouc.—*Balfour's Outlines of Botany, p.* 478; *Lindl. V. K. p.* 274.

PEDILANTHUS, (*Neck.*) From *pedilon*, a slipper, and *anthos*, a flower.

778. P. TITHYMALOIDES, (*Poit.*) Slipper-plant or Jew Bush. **A small unarmed shrub, about 3 feet high: leaves ovate acuminate: deciduous in the cold weather: flowers largish, bright scarlet. The whole plant abounds in an acrid bitter milk. This plant was introduced into the country before 1794, and is now domesticated every where chiefly used for hedges, as neither goats**

nor cows will touch the leaves. Native of South America.—*Hort. Cal. p.* 164; *Gra. Cat. B. pl. p.* 179.

EUPHORBIA. Linnæus named this genus after Euphorbus, a physician to Juba, King of Mauritania.

779. E. LIGULARIA, (*Roxb.*) Munsa sij, *Beng.* Five angled Spurge. A small tree; flowers small, greenish-yellow. The root mixed with black pepper is used by the natives against snake bites. The plant is sacred to MUNSA the goddess of Serpents. Native of the Moluccas, Peninsula of India, Bengal.—*Roxb. fl. Ind.* II. *p.* 465; *Hort. Cal. p.* 161.

780. E. NIVULIA, (*Buch.*) Eleikullie, *Tam.* Akoo-jemmoodoo, *Tel.* Ptoon, *Hind.* Shij, *Beng.*

Tree: branches round; thorns stipulary: leaves sub-sessile, wedge shaped: peduncles 3-flowered: flowers greenish yellow.

Remarks.—The juice of the leaves of this plant is used internally as a purgative; mixed with margosa oil, it is applied externally in certain cases of rheumatism. (*Ainslie.*)—*Wight's Icon. fig.* 1862; *Roxb. fl. Ind.* II. 467; *Hort. Cal. p.* 162; E. neriifolia, *Linn.*; *Gra. Cat. B. pl. p.* 178.

781. E. CATTIMANDOO, (*W. Elliot.*) Cattimandoo. Gum plant.

Shrub or small tree: erect, 5-sided with prominent repand angles: stipulary thorns paired, short, subulate: leaves sessile, succulent, deciduous, obovate, subcuneate, cuspidate, glabrous: peduncles crowded, 3-flowered, middle one usually sterile, and lateral one fertile: flowering after the fall of the leaf.—*Wight's Icon. fig.* 1993. This plant yields the valuable Cattimandoo gum.

782. E. ANTIQUORUM, (*Linn.*) Triangular Spurge. Shadray kullie, *Tam.* Bontajammoodoo, *Tel.* Narashij, Seyard, *Hind.* Narsij, *Beng.* Stems jointed, erect, ramous 3-4 or more angled; angles furnished with numerous protuberances, each armed with two short spreading stipulary spines: joints straight: peduncles solitary or in pairs, usually 3-flowered a little above the axils of the stipules: flowers greenish-yellow.

Remarks.—The juice which flows from the branches of this plant is corrosive. The natives use it externally in rheumatism ; they also give it in toothache, and internally, when diluted, as a purgative in cases of obstinate constipation.—*Roxb. fl. Ind.* II. *p.* 463 ; *Wight's Icon. fig.* 897 ; *Gra. Cat. B. pl. p.* 179 ; *Hort. Cal. p.* 162.

783. E. TORTILIS, (*Rottler.*) Spiral Spurge. Stems erect, jointed, joints spirally twisted : angular ; angles furnished with armed protuberances ; flowers numerous, fascicled on the angles : peduncles 3-flowered.—*Wight's Icon. fig.* 898.

784. E. TIRUCALLI, (*Linn.*) Milk-hedge or Indian Tree Spurge. Tirucalli, *Tam.* Lunka-sij, *Beng.*

Remarks.—A small unarmed tree, with small, yellow flowers. The fresh acrid juice of this plant is used as a vesicatory. It is used among the natives as a good manure. Goats will eat the plant notwithstanding its acrid juice. Bark and small branches are ingredients used in dyeing cotton a black colour. Root in decoction is administered internally in pains in the stomach. On the Coromandel coast it is frequently employed for hedges and is known as the milk hedge. Common.—*Roxb. fl. Ind.* II. *p.* 470 ; *Gra. Cat. B. pl. p.* 179 ; *Hort. Cal. p.* 162.

785. E. BOJERI, (*Hook.*) Bojer's Euphorbia. A small, shrubby plant, with pretty, scarlet flowers. Native of Madagascar.

POINSETTIA, (*Graham.*) Named in honor of Mr. Poinsette, who discovered the plant in Mexico in 1828.

786. P. PULCHERRIMA, (*Grah.*) Handsome Poinsettia. A shrub ; flowers small, green, but the floral leaves (bractes) very large and of a vermillion colour, which gives the plant a very handsome appearance when in flower. Native of Mexico.—*Hort. Cal. p.* 164.

787. P. *β.* ALBIDA. A shrub, same as last of which it is a variety, with large white floral leaves, and small, green flowers.

HURA, (*Linn.*) The name of the plant in South America.

788. H. CREPITANS, (*Linn.*) Sand-box tree.

Remarks.—A small, armed tree, of rapid growth ; wood very soft and brittle ; the fruit resembles a small orange without the peel, and when ripe its numerous valves burst with an elastic jerk. The sap of the leaves and bark is highly poisonous. One or two of the seeds are said to have been administered to Negro slaves as purgatives with fatal consequences. —(*Adr. Jussieu.*) *Gra. Cat. B. pl p.* 184 ; *Hort. Cal. p.* 161.

STILLINGIA, (*Gard.*) In honour of Dr. Benjamin Stillingfleet, an eminent English botanist.

789. S. SEBIFERA, (*Michx.*) Chinese Tallow tree. A tree; branches drooping, leaves rhomb-ovate, pendulous; flowers very small, yellow, in terminal racemes. Fruit size of a cherry, tricoccous, very hard. The sebaceous produce of the seeds forms the vegetable tallow of China, which, however, is for the lamps, far inferior to cocoanut oil.—(*Roxb.*) *Hort. Cal. p.* 161; Sapium sebiferum.—*Roxb. fl. Ind.* III. *p.* 693; *Gra. Cat. B. pl. p.* 184.

ACALYPHA, (*Linn.*) From *a*, privative, *kalos*, pleasant, and *aphe*, touch.

790. A. INDICA, (*Linn.*) Indian Acalypha. Cupamani, *Tam.* Mooktojoori, *Beng.* An annual;, common during the cold season; flowers small, greenish. The root bruised in hot water is employed as a cathartic, and the leaves as a laxative in decoction; mixed with common salt the latter are applied externally in scabies.—*Roxb. fl. Ind.* III. *p.* 675; *Wight's Icon. fig.* 877; *Gra. Cat. B. pl. p.* 186; *Hort. Cal. p.* 160.

ALEURITES, (*Frost.*) Derived from *aleurites*, mealy; in allusion to the farinaceous substance with which the whole plant is covered.

791. A. TRILOBA, (*Frost.*) Belgaum Walnut. A large tree: leaves petioled, cordate, with entire or scolloped margins, 3-5 lobed: panicles terminal: flowers small, white: fruit roundish, somewhat compressed, pointed, very hard, 2-celled: cells 1-seeded.

Remarks.—Kernels eatable, tasting like fresh alnuts. They yield by expression a large proportion of very pure palatable oil. (*Roxb.*) Native of the Moluccas, Malay Islands, South. Mahratta country about Belgaum, Bengal, Assam.—*Roxb. fl. Ind.* III. *p.* 629; *Gra. Cat. B. pl. p.* 181; *Hort Cal. p.* 159.

GIVOTIA, (*Griff.*)

792. G. ROTTLERIFORMIS, (*Griff.*) A small tree, common in the subalpine forest along the base of the central range of ghauts. —*Wight's Icon. fig.* 1889.

JATROPHA, (*Kunth.*) From *iatros*, physician, and *trophe*. food; in allusion to the medicinal properties of the plants.

793. J. PANDURÆFOLIA, (*Andr.*) Fiddle-leaved Jatropha. A shrub, with beautiful scarlet flowers. Native of Cuba.—*Hort. Cal. p.* 158.

794. J. MULTIFIDA, (*Linn.*) Coral plant. A shrub, flowers small, red. Common in gardens. Native of South America.—*Gra. Cat. B. pl. p.* 183; *Hort. Cal. p.* 149.

795. J. GLANDULIFERA, (*Roxb.*) Bristle-edged Jatropha, Addaley, *Tam.* Nela amida, *Tel.* A shrub, flowers small, greenish. India.—*Roxb. fl. Ind.* III. 688.

796. J. CURCAS, (*Linn.*) Angular-leaved Physic-nut. Caat-amunak, *Tam.* Nepalam, Adivi amida, *Tel.* Bag-bherenda, *Hind.* Bag-Dharanda, *Beng.*

Remarks.—Native of South America, and domesticated in India. Flowers small, green. Seeds purgative and occasionally emetic. An expressed oil is obtained from them, which is reckoned a valuable external application in itch and herpes; it is also used a little diluted, in chronic rheumatism. The varnish used by the Chinese for covering boxes is made by boiling this oil with oxide of iron. The leaves are considered rubefacient and discutient. The milky-juice is supposed to be detergent and healing, and dyes linen black.—(*Ainslie*) *Roxb. fl. Ind.* III. *p.* 686; *Gra. Cat. B. pl. p.* 183; *Hort. Cal. p.* 158.

JANIPHA, (*Kunth.*) Derived from *Janipaba*, the Brazilian name of the plant.

797. J. MANIHOT, (*Kunth.*) Bitter Cassava, Tapioca, or Manihot plant. Maravullie, *Tam.*

Remarks.—A shrub about 8 feet high, extensively cultivated for food all over the tropical parts of the world; of this plant the large root, weighing as much as 30 lbs., is full of venomous juice, which if taken internally produces death. The roots are rasped, the pulp well bruised, and then thoroughly washed, after which the mash is placed on iron plates to be heated. In this way the venom is washed out or driven off, and the residue becomes Cassava. The powder which floats off in the water is a very pure starch, which, when it settles down, becomes Tapioca. (*Lindl.*) Tapioca is a light and nourishing food, and affords a good diet for the sick. Native of South America. Cultivated in India.—*Gra. Cat. B. pl. p.* 183; *Hort. Cal. p.* 158; *Useful Plants of India, p.* 273.—Jatropha manihot, (*Linn.*) Manihot utilissima, *Phol.*

RICINUS, (*Tournef.*) From *ricinus*, a tick; resemblance in the seeds.

798. R. COMMUNIS, (*Linn.*) Castor oil plant. Sittamanak, *Tam.* Sittamindi, or Amidum, *Tel.* Arend, *Hind.* Bherenda, *Beng.*

Remarks.—A shrub, common about villages all over India, and much cultivated for the sake of the seeds which yield the well known Castor Oil. The seeds are used by dyers to mix with colours and render them permanent. The leaves are a favorite food of some silk worms.—*Roxb. fl. Ind.* III. *p.* 689; *Gra. Cat. B pl. p.* 183; *Hort. Cal. p.* 158.—Ricinus speciosus, *Rurm.*

CODIÆUM, (*Rumph.*)

799. C. CHRYSOSTICTON, (*Rumph.*) Variegated Codiæum. An ornamental shrub, with pretty variegated leaves, and small, greenish yellow flowers. Native of the Moluccas.—*Hort. Cal. p.* 157. *Croton variegatum. Linn.*; *Roxb. fl. Ind.* III. *p.* 678; *Gra. Cat. B. pl. p.* 182.

800. C. CRISPUM. Crisp-leaved Codiæum.—*Hort. Cal. p.* 157.

801. C. LONGIFOLIUM. Long-leaved Codiæum.

CROTON, (*Linn.*) Greek for a *tick*, an insect troublesome to dogs; the seeds of some of the species resemble it.

802. C. POLYANDRA, (*Roxb.*) Konda amadum, *Tel.* Hakoon, *Hind.* Duntee, *Beng.*

Remarks.—A large shrub; flowers dull yellow. The seeds are reckoned a powerful purgative. The natives mix them with water, administering two or three at a time according to circumstances. *Roxb. fl. Ind.* III. *p.* 682; *Hort. Cal. p.* 156; Baliosdermum. *R. W. Wight's Icon. fig.* 1885.

803. C. OBLONGIFOLIA, (*Roxb.*) A small tree; flowers small, greenish yellow. Native of Bengal.—*Roxb. fl. Ind. III. p.* 685; *Hort. Cal. p.* 156.

PHYLLANTHUS, (*Linn.*) From *phyllon*, a leaf, and *anthos*, a flower; flowers produced from the edges of the leaves.

804. P. MADRASPATENSIS, (*Linn.*) Madras Phyllanthus. Neelacadamboo, *Tam.* Nulla-userekai, *Tel.* Annual: leaves narrow, cuneate: calyx of *female* flowers six-toothed, obtuse: of *male* flowers five-toothed: flowers axillary, small, greenish. The

leaves in infusions are given as a drink in headaches. The plant is somewhat astringent. Peninsula of India, Bengal, &c.—*Roxb. fl. Ind. III. p.* 654; *Wight's Icon, fig.* 1895; *Gra. Cat. B. pl. p.* 180; *Hort. Cal. p.* 153.

805. P. NIRURI, (*Linn.*) Niruri. Kilanellie, *Tam.* Neela-oosherker, *Tel.* Sada hajur-muni, *Beng.*

Remarks.—A weed, common everywhere, and where it has moisture to grow, always in flower. The leaves, which are bitter, are a good stomachic. The fresh root is given in jaundice. Half an ounce rubbed up in a cup of milk, and given every morning and evening, will complete the cure in a few days, without any sensible operation of the medicine—*Roxb. fl. Ind.* III. *p.* 659; *Gra. Cat. B. pl. p.* 180; *Hort. Cal. p.* 154; *Wight's Icon. fig.* 1894.

XYLOPHYLLA, (*Linn.*) From *xylon,* wood, and *phyllon,* a leaf; rigidity of the leaves.

806. X. ANGUSTIFOLIA, (*Willd.*) Narrow-leaved Xylophylla. A small shrub; leaves pinnate, linear-lanceolate, crenate; flowers stalked, hermaphrodite, small, yellowish-red. Native of Jamaica. —*Hort. Cal. p.* 155;—Phyllanthus angustifolius, *Swz.*

EMBLICA, (*Gœrtn.*) The name of the plant in the Moluccas

807. E. OFFICINALIS, (*Gärtn.*) Awla tree. Nelle-kai, *Tam.* Assereki, *Tel.* Amlika, Arooli, Aoongra, *Hind.* Amla, *Beng.*

Remarks.—A tree; wood hard and durable, particularly under water. Bark very astringent, used by the natives for tanning. Fruit succulent, sharp, unpalatable, unless pickled or preserved with sugar. (*Roxb.*) Flowers minute, greenish-yellow. Cultivated in gardens.—*Wight's Icon. fig.* 18 6; *Hort. Cal. p.* 153. Phyllanthus emblica, *Linn.*; *Roxb. fl. Ind.* III. 671; *Gra. Cat. B. pl. p.* 180.

CICCA, (*Linn.*) Supposed to be a man's name.

808. C. DISTICHA, (*Linn.*) Country Star Gooseberry. Arunelli, *Tam.* Harfaroorie, Hind. Nubaree, *Beng.*

Remarks.—A small tree, with pinnate leaves, and small green flowers. The leaves are sudorific. The round succulent fruit is sub-acid, and is eaten both raw and made into pickles and preserves. The seeds are cathartic. The wood is of little value. Cultivated in gardens.—*Gra. Cat. B. pl. p.* 180; *Hort. Cal. p.* 153;—Phyllanthus longifolius, *Jacq.*; *Roxb. fl. Ind.* III. *p.* 700;—Averrhoa acida, *Linn.*

ORDER CIII. URTICACEÆ, ENDLICH.

NETTLE TRIBE.

Description.—Trees, shrubs, or herbs, with watery juice and alternate stipulate leaves, often covered with asperities or stinging hairs. Flowers unisexual, rarely hermaphrodite, scattered or collected into heads or catkins. Perianth divided; stamens definite, opposite the lobes of the perianth, and inserted into its base; filaments sometimes curved and elastic; ovary superior, 1-celled, with a solitary ovule; fruit indehiscent, with a single seed. Embryo straight, hooked, or spiral, with or without albumen; radicle superior.

Distribution.—Natives chiefly of temperate regions.

Properties.—Some of the plants have caustic juice connected with stinging hairs; others yield valuable fibres. Occasionally narcotic qualities are present. *Böhmeria nivea* supplies the fibres whence Chinese grass-cloth is made. *Humulus lupulus*, the Hop, is cultivated on account of its bitter principle, Lupulin, which exists in the resinous scales surrounding the fruit.—*Balfour's Outlines of Botany*, *p.* 479.

CANNABIS, (*Linn.*) So called from *ganeh*, its Arabic name, and from the Celtic appellation *can*, reed, and *ab*, small.

809. C. SATIVA, (*Linn.*) Common Hemp plant. Ganja, *Tam.* Ganjah Chettu, *Tel.* Ganja, *Beng.*

Annual plant, 4-6 feet, covered all over with an extremely fine rough pubescence: stem erect, branched, green, angular: calyx 5-parted: leaves alternate or opposite, on long petioles, digitate, with linear lanceolate, sharply-serrated leaflets, tapering to a long smooth point: flowers in spike, axillary, clustered, small, greenish white: males lax and drooping: females erect, leafy at the base.—*Roxb. fl. Ind.* III. *p.* 772.

Remarks.—The common hemp plant is cultivated all over India for the sake of the intoxicating drug called *Bhang* which is prepared from it: also for the leaves which are smoked to cause intoxication. Its use as a cordage plant is becoming known in Sind and the Punjab. For full particulars of this useful plant, see Dr. Royle's *Fibrous Plants of India*, *p.* 314, &c. &c.

ORDER CIV. ARTOCARPACEÆ, LIND.

BREAD-FRUIT, AND MULBERRY TRIBE.

Description.—Trees or shrubs, with a milky juice, and alternate lobed leaves, having large stipules. The flowers are unisexual, and are collected into dense heads or catkins. The plants are considered by many as a section of Urticaceæ, from which they differ chiefly in being lactescent, in

their fruit being a sorosis or syconus. Perianth divided, often wanting; ovary 1-celled; ovules erect or pendulous. Fruit polygynœcial or anthocarpus, consisting of achenes immersed in the persistent fleshy perianths, or situated upon or within large fleshy receptacles. Seeds albuminous or exalbuminous; embryo straight or hooked. There are two divisions of this order.

SUB-ORDER 1. ARTOCARPEÆ, the Bread-fruit Tribe, with flowers in dense heads, fruit usually a sorosis, seed erect or pendulous, with a variable quantity of albumen; embryo straight. Natives of the Tropics.

ARTOCARPUS, (*Linn.*) So named from *artos*, bread, and *carpos*, fruit; in allusion to the well known uses of the Bread-fruit.

810. A. INCISA, (*Linn.*) Bread-fruit tree.

Remarks.—A handsome tree of slow growth; cultivated in gardens about Madras; bears very well, but the fruit is of that variety which is full of seeds and is of no value.* The bark of this tree, stripped, and then beaten and prepared, makes a kind of cloth with which the South Sea Islanders clothe themselves. At Tahiti, clothing made of it, and worn chiefly by the common people, was more common than that made from of the paper mulberry, though inferior to it in softness and whiteness. Native of the South Sea Islands. Naturalized in Ceylon, and many parts of India.

811. A. INTEGRIFOLIA, (*Linn.*) Indian Jak-tree. Pela, *Tam.* Panasa, *Tel.* Kantal, *Beng.*

Remarks.—A valuable timber tree common all over India which grows rapidly to about 2 feet and a half in diameter; and yields a wood, much used for making furniture of every description, for which it answers remarkably well. It is said to be superior in color to mahogany, when well polished: the wood is yellow when cut; but turns to various shades of brown, and improves by age. Like others of the same family, the tree abounds in viscid milky juice. The fruit, which grows to an enormous size, and hangs by a peduncle springing from the trunk, is a favorite article of food among the natives. There are several varieties, but what is called the honey-jak is by far the sweetest and best. The seeds when roasted are also much prized as a diet among the poorer classes. The leaves are given to goats and other cattle, and are said to be very fattening. The situation of the fruit varies with the age of the tree, being first borne on the branches, then on the trunk, and on very old trees on the roots.—*Roxb. fl. Ind.* III. *p.* 522; *Gra. Cat. B. pl. p.* 192.

SUB-ORDER 2. MOREÆ, the Mulberry and Fig Tribe, with flowers in heads, spikes or catkins, fruit a sorosis or syconus, seed pendulous, embryo hooked, albumen fleshy; natives both of temperate and tropical climates. Properties under the species.

MORUS, (*Tournef.*) So named from the Celtic word *mor*. black, many species having black fruit.

812. M. INDICA, (*Linn.*) Indian Mulberry. Cumbli poochie pallam, *Tam.*

Remarks.—A small tree with long tapering leaves, sometimes lobed; fruit dark red, used for making tarts. Roxburgh says, this is the species cultivated in Bengal for feeding silk worms, and that it is usually cut over four times a year and kept down as a bush.—*Roxb. fl. Ind.* III. *p.* 596; *Gra. Cat. B. pl. p.* 194; *Hort. Cal. p.* 283.

813. M. ALBA, (*Linn.*) White Mulberry. A tree: leaves cordate, serrate, entire, or variously lobed: fruit rather small, white. Native of Persia, Asia Minor. Found in gardens in several parts of India. Much cultivated in S. Europe, for its leaves, to feed the silk worm.—*Roxb. fl. Ind.* III. *p.* 594; *Gra. Cat. B. pl. p.* 194; *Hort. Cal. p.* 283.

814. M. ATROPURPUREA, (*Roxb.*) Dark purple Mulberry tree. A tree, with cordate, serrate leaves and dark purple cylindric fruit Native of China.—*Roxb. fl. Ind.* III. *p.* 595; *Gra. Cat. B. pl. p.* 195; *Hort. Cal. p.* 283.

815. M. NIGRA, (*Linn.*) Black Mulberry tree. A tree, leaves cordate, ovate, unequally toothed; fruit black. Native of Persia.—*Gra. Cat. B. pl. p.* 195.

FICUS, (*Linn.*)

816. F. CARICA, (*Linn.*) Common cultivated Fig. Native of S. Europe, cultivated in gardens all over India.

Remarks.—It has been cultivated from time immemorial, and is mentioned in the most ancient fable extant, viz., the fable of the trees. Judges, ix. 8. "And the trees said to the fig tree, come thou and reign over us. But the fig tree said unto them, should I forsake my sweetness, and my good fruit, and go to be promoted over the trees?"

Thomson in his own descriptive language has pictured the mode of growth.

——— ———" and dark,
Beneath his ample leaf the luscious fig.

Autumn.

The green skinned variety according to Shakespeare, is the Fairie's favorite,

"Be kind and courteous to this gentleman,
Hop in his walks, and gambol in his eyes,
Feed him with apricots and dew-berries,
With purple grapes, *green figs*, and mulberries."

Midsummer Night's Dream.—*Gra. Cat. B. pl. p.* 190.

817. F. INDICA, (*Linn.*) Banyan Tree. Ala-marum, *Tam.* Marri, *Tel.* Bur, But, *Beng.*

Tree : branches spreading very much : lower ones rooting : leaves alternate, ovate, bluntly acuminated; with parallel nerves, paler underneath, entire, downy when young, afterwards smooth : fruit receptacles axillary, paired, sessile, as large as a middle-sized cherry, appearing and ripening in the hot season.—*Wight's Icon. fig.* 1989.

Remarks.—Common all over India, and in some places of an immense size. One growing on an island in the Nerbudda above Broach has long been celebrated.—Lieutenant Colonel Sykes mentions one at the village of Mhow in the Poona collectorate, with 68 stems descending from the branches, and capable of affording shade, with a vertical sun, to 20,000 men (*Madras Journ. of Science, No.* 22.) *Kabir Bur,* near Broach, now the gloomy recess of superstitions, and the haunts of hateful birds, the owls and flyings foxes. (*Nimmo*). *Bark* smooth, light ash coloured. *Wood* light, white, and porous. *Leaves* used by the Brahmins as plates for which purpose they are joined together by inkles. *Bird lime* is prepared from the tenacious milky juice, which every part of the tree yields in abundance when wounded. Birds eat the fruit and the seeds grow the better for being passed through them. If they drop in the axils of the leaves of the Palmyra tree, (Borassus flabelliformis,) they grow, and extend their descending parts so as in time to embrace entirely the Palmyra, except its upper parts. In very old ones, the top thereof is just seen issuing from the trunk of the Banyan itself, as if it grew from thence whereas it runs down through its centre, and has its roots in the ground, the Palm being the oldest.—*Roxb. fl. Ind.* III. *p.* 539 ; *Gra. Cat. B. pl. p.* 189 ; *Hort. Cal. p.* 286.

818. F. RELIGIOSA, (*Linn.*) Poplar-leaved Fig-tree. Arasa-marum, *Tam.* Ray, Raghie, *Tel.* Pippul, *Hind.* Ashwuth, *Beng.*

Remarks.—A large tree equally common with the last. It is much respected by the natives, who are very unwilling to cut it down at any time. It is frequently to be met with near pagodas, houses, and other buildings. The Hindoos venerate it from a superstitious belief that their deity Vishnoo was born among the branches. Birds are very fond of the fruit, and often drop the seeds in cracks of buildings where they vegetate, and occasion great damage if not removed in time.—*Roxb. fl. Ind.* III. *p.* 547 ; *Gra. Cat. B. pl. p.* 190 ; *Wight's Icon. fig.* 1967 ; *Hort. Cal. p.* 287.

819. F. ELASTICA, (*Roxb.*) Indian Rubber tree.

Tree : leaves from oval to oblong, pointed, thick, firm and glossy : fruit in axillary pairs, sessile, oval, smooth, the size of an olive : stipules nearly as long as the leaves, smooth and rosy.

Remarks.—This beautiful tree produces when wounded a quantity of milk which yields about one-third of its weight of Caoutchouc. This milk

is used by the natives of Silhet to smear over the inside of baskets constructed of split rattan, which are then rendered water tight. The milk is extracted by incisions made across the bark down to the wood, at a distance of about a foot from each other all round the trunk or branch up to the top of the tree, and the higher the incision, the more abundant the fluid is said to be. The tree requires a fortnight's rest before the operation is repeated. When the juice is exposed to the air, it separates spontaneously into a fine elastic substance and a fœtid whey coloured liquid. Fifty ounces of pure milky juice taken from the tree in August yielded exactly 15½ oz., of clean washed Caoutchouc. This substance is of the finest quality and may be obtained in large quantities. This tree is easily propagated by cuttings and is very ornamental. Native of the Khassya mountains.—*Roxb. fl. Ind.* III. *p.* 541 ; *Wight's Icon. fig.* 663 ; *Useful Plants of India, &c. p.* 223 ; *Gra. Cat. B. pl. p.* 190 ; *Hort. Cal. p.* 286.

820. F. NITIDA, (*Thunb.*) Shining-leaved Fig-tree. A handsome tree. Native of China, Lower Nepaul, Khassya mountains, Penang, Coromandel.—*Gra. Cat. B. pl. p.* 190 ; *Hort. Cal. p.* 288.

821. F. RACEMOSA, (*Linn.*) Red-wooded Fig tree or Country Fig tree. Attie-marum, *Tam.* Maydi, *Tel.* Gooler, *Hind.*

Tree: leaves ovate, entire, pointed, veined : fruit receptacles on racemes, round, reddish, size of a small plum.

Remarks.—The fruit of this tree is used in various ways, dried, in curries, &c. The root in decoction and bark of the tree are used in medicine. Common.—*Jaffrey's Hints &c. p.* 55 ; *Gra. Cat. B. pl.* 193.

822. F. OPPOSITIFOLIA, (*Roxb.*) Opposite-leaved Fig tree. Leaves opposite, oblong, serrate : fruit in axillary pairs, or on cauline racemes, round, peduncled, hairy. "A small tree, native of tanks and rivulets where the soil is moist and rich. It, or *F. dæmona*, is frequent in such situations about Madras : they much resemble each other, and I (Dr. Wight) may have confounded them."—*Wight's Icon. fig.* 638 ; *Roxb. fl. Ind.* III. *p.* 561.

823. F. TSIELA, (*Roxb.*) *Ficus Indica, Willd, not Linn.* Leaves long, petioled, ovate-oblong, acute, polished, veins parallel and simple : fruit paired, axillary, sessile, round, turbinate.—*Roxb. fl. Ind. p.* 549.

Remarks.—A large and very handsome tree, widely diffused over Southern India. It is very generally planted by road sides for the sake of its shade, and by not sending down roots from the branches is in so far

superior to either *F. Indica* (Banyan Tree) or *F. Benjamina*, the pendulous roots of which are often dangerous impediments on a road.—*Wight's Icon. fig.* 668.

824. F. HETEROPHYLLA, (*Roxb.*) Various-leaved Fig-tree. Shrubby, subscandent: leaves variously divided: fruit axillary, paired, peduncled, rough.—*Roxb. fl. Ind.* III. *p.* 532.

Remarks.—An extensively distributed plant, native of thickets, banks of rivers and water courses—a weak straggling shrubby species. A very polymorphous plant.—*Wight's Icon. fig.* 659.

825. F. BENJAMINA, (*Linn.*) Oval-leaved Fig tree. A large tree, widely diffused over Southern India, very umbrageous and much used as an avenue tree.—*Wight's Icon. fig.* 642.

ORDER CIV. STILAGINACEÆ. LINDL.

STILAGO TRIBE.

Description.—Trees or shrubs, with alternate, stipuled leaves, and minute diœcious flowers in scaly spikes. They are allied to Urticaceæ, and are chiefly distinguished by their large disk and vertical antherine cells, opening transversely, and having a fleshy connective. Their fruit is drupaceous, and seed suspended and albuminous.

Distribution.—Natives of the East Indies and Madagascar. Known species about 20.

Properties.—Unimportant.—*Balfour's Outlines of Botany, p.* 481; *Lindl. V. K. p.* 259.

ANTIDESMA, (*Linn.*) From *anti*, like, and *desmos*, a bond; name given in allusion to the bark of some of the species being used as ropes.

826. A. PANICULATA, (*Roxb.*) Downy Antidesma. A small tree, with alternate, short petioled, round ovate leaves, villous underneath: flowers in axillary and terminal spikes: forming panicles.—*Gra. Cat. B. pl. p.* 186; *Roxb. fl.* III. *p.* 770; *Wight's Icon. fig.* 820.

ORDER CV. PIPERACEÆ, RICH.

THE PEPPER TRIBE.

Description.—Shrubs or herbs, with jointed stems, usually opposite or verticillate leaves, stipules sometimes present, flowers bisexual in spikes, each supported on a bract; no perianth. Stamens two or more; ovary free, 1-celled: ovule 1, erect, orthotropal. Fruit somewhat fleshy, in

dehiscent, 1-celled, 1-seeded. Seed erect ; embryo in a vitellus or fleshy sac outside the albumen, and at the apex of the seed. The stems of Pepper have a peculiar arrangement of the woody matter in wedges and not in concentric zones.

Distribution.—Natives of tropical regions, specially in America and Asia. Known species 600.

Properties.—The plants of this order are pungent and aromatic, owing to the presence of an acrid resin, an oil, and a crystalline matter, Piperin. Some possess narcotic qualities, others are astringent.—*Balfour's Outlines of Botany, p.* 482 ; *Lindl. V. K. p.* 515.

CHAVICA, (*Miq.*)

827. C. NIGRUM, (*Miq.*) Black Pepper plant. Cultivated in gardens. Piper nigrum, *Linn.*

828. C. BETLE, (*Miq.*) Betle leaf Pepper. Vetthelei, *Tam.* Tamala pakoo, *Tel.* Pan, *Beng.* The leaves are sold in every bazar, and are chewed by the natives mixed with chunam, and the nut of the Areca palm. Native country unknown.—*Roxb. fl. Ind.* I. *p.* 158; *Gra. Cat. B. pl. p.* 198; *Wight's Icon. fig.* 1926.

829. C. ROXBURGHII, (*Miq.*) Long Pepper. Tipilie, *Tam.* Pipuloo, *Tel.* Pipul, Peepla-mool, *Hind.* Pipool, *Beng.* This plant is extensively cultivated, the female catkins dried form the long pepper of the shops. The berries have nearly the same chemical composition and properties as the black pepper, and are said to contain piperin. Native of Circar mountains. South Concan. Bengal.—*Wight's Icon. fig.* 1928 ; Piper Longum, *Linn.* ; *Roxb. fl. Ind.* I. 154 ; *Gra. Cat. B. pl. p.* 199 ; *Hort. Cal. p.* 299.

ORDER CVI. CASUARINACEÆ. LINDL.

BEEFWOOD TRIBE.

Description.—Leafless trees with pendulous, jointed, striated, sheathed branches and spikes or heads of unisexual flowers proceeding from bracts. Barren flowers in spikes, and whorled round a jointed rachis. Perianth 2-leaved, with 2 alternating bracts. Stamen 1, carrying up the united 2 leaves of the perianth in the form of a lid. Fertile flowers, capitate, without a jointed rachis, and naked. Ovary 1-celled ; ovules 1 or 2, othotropal ; styles 2. Fruit, winged achenes, combined into a bracteated cone. Seeds exalbuminous ; episperm with spiral cells ; radicle superior.

Distribution.—Tropical or sub-tropical plants, having the aspect of Equisetums. They abound in Australia. Known species about 32.

Properties.—Their wood is hard and heavy, and on account of its colour is called Beefwood.—*Balfour's Outlines of Botany, p.* 486 ; *Lindl. V. K. p.* 249.

CASUARINA, (*Linn.*) So named from the leaves resembling the feathers of the Cassowary of New Holland.

830. C. MURICATA, (*Roxb.*) Casuarina tree or Tinian pine.

Remarks.—This tree was introduced into Madras about fifty years ago, and is now well established, growing freely and ripening seed in great abundance. In general appearance it resembles the Larch Fir. It grows in 10 years to the height of about 30 feet. It generally grows very straight and where the main shoot is broken or lopped off, it throws out secondary shoots readily, which usually grow straight and erect. It thrives best in sandy tracts along the sea shore, and it would be desirable to plant it largely on the sand hills north and south of Madras where some numbers have already been grown. The wood is reddish in colour, in density and appearance it somewhat resembles Trincomallee wood. It bears a great strain, is well adapted for posts and said to bear submersion in water very well. On the whole this tree well deserves extensive cultivation on the sandy tracts, where it grows speedily.—*Balfour's Cyclopædia of India.*

831. C. EQUISITIFOLIA, (*Forst.*) Horse Tail Casuarina. An elegant tree resembling the above species. Both the above species are called by the Tamools Chavookoo marum, signifying Whip-tree.

ORDER CVII. CONIFERÆ OR PINACEÆ. JUSS ; LINDL.

CONIFEROUS OR PINE TRIBE.

Description.—Resinous trees or shrubs, with disc-bearing woody tissue : linear, acerose or lanceolate, parallel-veined leaves, sometimes clustered and having a membranous sheath at the base ; flowers unisexual and achlamydeous. Male flowers in deciduous catkins, each consisting of 1 stamen or of several united ; anthers 2 or many celled, dehiscing longitudinally, often crested above. Female flowers in cones ; scales arising from the axil of membranous bracts, supplying the place of ovaries ; no style nor stigma ; ovules naked, 1, 2, or several, at the base of each scale, with a large micropyle at the apex. Fruit a cone formed of hardened scales, sometimes with the addition of bracts also, which either disappear, or become enlarged and lobed. Seed with a hard crustaceous spermoderm, sometimes winged ; embryo in fleshy oily albumen, sometimes polycotyledonous ; radicle having no definite boundary, but losing itself among the lax cells of the albumen near the apex of the seed.

Distribution.—Conifers are found in various parts of the world, both in cold and hot climates. They are most abundant in temperate regions, both in the northern and southern hemispheres. In the former they occur in the form of Pines, Spruces, Larches, Cedars, and Junipers, while in the latter we meet with species of Araucaria, Eutassa, and Dammara. Known species 120 or more.

Properties.—Conifers supply valuable timber and yield resin, oil, pitch, and turpentine of various kinds. *Abies balsamea*, the balm of Gilead Fir, and *A. Canadensis*, Hemlock Spruce yield Canada Balsam.

Cedrus Libani, is the Cedar of Lebanon. *Dammara Australis*, is the Kauri or Cowdie Pine of New Zealand, which attains a height of 200 feet, and supplies valuable timber for masts, as well as a hard useful resin; *D. Orientalis*, yields the Dammar resin of India.—*Balfour's Outlines of Botany, p.* 490; *Pinaceæ, Lindl. V. K. p.* 226.

ARAUCARIA, *(Juss.)* So styled from its name *araucanos* in Chile.

832. A EXCELSA, (*H. K.*) Norfolk Island Pine. This "is a most superb plant, growing to an enormous size, and never losing the bright imperishable foliage with which it is covered as with a coat of mail. This genus, Sweet observes, "may be termed the handsomest genus of plants with which we are acquainted." This beautiful plant thrives very indifferently in the Madras Gardens. Native of Norfolk Island. *Loud. Encyclop. of Plants, p.* 846.

833. A. CUNNINGHAMII, (*G. Don.*) Cunningham's Araucaria. A tree. Native of N. Holland.

JUNIPERUS, (*Linn.*)

834. J. VIRGINIANA, (*Linn.*) Virginian Juniper.

835. J. CHINENSIS, (*Linn.*) Chinese Juniper. A small shrub.

THUJA, *(Tournef.)* So named from *thyon*, a sacrifice, the resin of the oriental variety being used instead of incense at sacrifices.

836. T. ORIENTALIS, (*Linn.*) Chinese Arbor Vitæ. A shrub native of China.

ORDER CVIII. CYCADACEÆ. LINDL.

CYCAS TRIBE.

Description.—Small palm-like trees or shrubs, with unbranched stems, occasionally dichotomous, marked with leaf-scars, and having large medullary rays, along with pitted tissue. Leaves pinnate, and usually circinate in vernation. Flowers bisexual and achlamydeous. Males in cones, the scales bearing clusters of 1-celled anthers on their lower surface. Females consisting of ovules on the edge of altered leaves, or placed below or at the base of the scales. Seeds either hard, or having a soft, spongy spermoderm, sometimes polyembryonous; embryo hanging by a long suspensor in a cavity of fleshy or mealy albumen; cotyledons unequal.

Distribution.—Natives chiefly of the tropical regions of America and Asia. Known species 46.

Properties.—Cycads have a mucilaginous juice, in which there is often much starch, which is used for food. Species of *Encephalartos* supply what is called Caffre bread.—*Balfour's Outlines of Botany, p.* 492; *Lindl. V. K. p.* 223.

CYCAS, (*Linn.*) The Greek name of a palm said to grow in Ethiopia.

837. C. CIRCINALIS, (*Linn.*)

Remarks.—This is a singular looking plant, very abundant in the forests of Malabar, and Cochin. It is very fertile, and easily propagated both from nuts and branches. A kind of sago is prepared from the nuts. In order to collect it, the latter are dried in the sun for about a month, beaten in a mortar and the kernel made into flour. It is much used by the poorer class of natives and forest tribes. It however will not keep long. The sago of commerce formerly believed to come from the trunk of Cycas circinalis, is chiefly the product of *Sagus farinifera*, Gärtn.—*Useful Plants of India, p.* 180 ; *Hort. Cal. p.* 554.

838. C. REVOLUTA,* (*Thunb.*) Japan Cycas. A shrub. Native of Japan. "The Japanese eat the fruits, and from the trunk extract a kind of sago, which is highly esteemed, especially by the people of rank."—*Hort. Cal. p.* 555.

CLASS II.—MONOCOTYLEDONES, ENDOGENÆ.

ORDER CIX. DIOSCOREACEÆ. LINDL.

YAM TRIBE.

Description.—Twining shrubs, with epigeal or hypogeal tubers, usually alternate leaves, and small bracteated, unisexual flowers growing in spikes. Perianth 6 cleft, in 2 rows, herbaceous, adherent. Stamens 6, inserted into the base of the perianth. Ovary inferior, 3 celled: ovules 1-2, suspended; style trifid. Fruit compressed, 3 celled, 2 cells often abortive, sometimes fleshy. Seeds albuminous; embryo in a cavity.

Distribution.—Chiefly found in tropical countries. Known species 150.

Properties.—Acridity prevails in the order, but it is often associated with a large amount of starch.—*Balfour's Outlines of Botany, p.* 493; *Lindl. V. K. p.* 213.

DIOSCOREA, (*Linn.*) Named after Pedacius Dioscorides, a famous Greek physician.

839. D. GLOBOSA, (*Roxb.*) Choopri-aloo, *Beng.* and *Hind.* Tubers roundish, white: stem twining, six winged: leaves alternate and opposite, sagittate-cordate: *male* spikes compound, long pendulous, and verticelled, *female* simple, very fragrant.

Remarks.—This species is much cultivated as affording the most esteemed of the yams, which are eaten by Europeans and Natives in India.—*Roxb. fl. Ind.* III. *p.* 797; *Wight's Icon. fig.* 812; *Gra. Cat. B. pl. p.* 218; *Hort. Cal. p.* 652.

840. D. ALATA, (*Linn.*) Yam. Eeams kalungoo, *Tam.* Niluvu pendalum, *Tel.* Kan aloo, *Hind.* Khum aloo, *Beng.*

Tubers oblong, white, stems annual, twining, four winged: leaves opposite, deep cordate, from five to seven nerved: flowers small, green.

Remarks.—A favourite kind of Yam with the Natives. The juice of the leaves is used in stings of scorpions. The root powdered is a good application to ulcers.—*Roxb. fl. Ind.* III. *p.* 797; *Wight's Icon. fig.* 810; *Gra. Cat. B. pl. p.* 218; *Hort. Cal. p.* 652.

841. D. PURPUREA, (*Roxb.*) Pondicherry Sweet Potato. This is an excellent kind of yam, only found in a cultivated state.—*Hort. Cal. p.* 652.

842. D. ACULEATA, (*Linn.*) Goa Potato. Kautoo-kelangoo, *Tam.* Moualoo, *Beng.* and *Hind.*

Tubers oblong, pendulous, the fibres of the proper roots become spinous: leaves reniform, cordate, acute, from five to seven nerved.

Remarks.—The tubers make a good esculent vegetable. They are about 2 lbs. or more in weight. They are dug up in the forest during the cold season and sold in the bazars.— *Roxb. fl. Ind.* III. *p.* 800; *Wight's Icon. fig.* 2060; *Gra. Cat. B. pl. p.* 218; *Hort. Cal. p.* 652.

843. D. OPPOSTIFOLIA, (*Linn.*) Herbaceous, smooth, leaves opposite, from cordate to ovate-lanceolate, acute; from three to seven nerved: male flowers panicled, the female one spiked. A native of Coromandel, and of frequent occurrence in sub-alpine jungles.—*Roxb. fl. Ind.* III. *p.* 801; *Wight's Icon. fig.* 813; *Gra. Cat. B. pl. p.* 219; *Hort. Cal. p.* 653.

844. D. PENTAPHYLLA, (*Linn.*) Kauta-aloo, *Beng.* Tubers oblong: stem herbaceous, twining, prickly: leaves digitate, downy: male flowers panicled, greenish-white, fragrant: female ones spiked.

Remarks.—A common species in jungles on low hills, &c. but never cultivated, so far as I have seen, says Dr. Wight, which is remarkable, as I have always found the Natives dig the tubers, whenever they had an opportunity, to dress and eat them. The male flowers are sold in the bazars and eaten as greens.—*Roxb. fl. Ind.* III. *p.* 806; *Wight's Icon. fig.* 814; *Gra. Cat. B. pl. p.* 218; *Hort. Cal. p.* 653.

845. D. BULBIFERA, (*Linn.*) Leaves alternate, deeply cordate, acuminate, 7 nerved, the exterior nerves 2 cleft: transverse veins reticulated: stem bulbiferous: male spikes fascicled.

Remarks.—The *dioscoreæ* are climbing and sarmentaceous plants, the roots are large, tuberous, and very rich in nutritious starch. The flowers and roots [tubers ?] are eaten by the poorer classes: the latter are very bitter, but, after undergoing the process of being covered over with ashes and steeped in cold water, they become eatable. This yam, in decoction with powdered China root, is applied to the cleaning of ulcers.—*Wight's Icon. fig.* 878; *Gra. Cat. B. pl. p.* 219.

Order CX. ROXBURGHIACEÆ. Wall.

Roxburghia Tribe.

Description.—Twining shrubs, with large, solitary hermaphrodite flowers, allied to Trilliaceæ, and distinguished chiefly by their 1 celled, 2 valved fruit, with a basal placenta. Perianth 4 leaved, coloured. Stamens 4, hypogynous. Ovules anatropal.

Distribution.—Natives of the hot parts of India. Known species 4.

Properties.—Unimportant.—*Balfour's Outlines of Botany, p.* 494; *Lindl. V. K. p.* 219.

Roxburghia, (*Dryander.*) In honor of the late William Roxburgh, M. D., director of the Botanic Gardens, Calcutta.

846. R. gloriosoides, (*Dryand.*) Showy Roxburghia. A small climbing plant, flowers pink and yellow. Found on the Pulicat Hills at an elevation of about 2,000 feet, flowering in August and September. —*Wight's Icon. fig.* 2061.

Order CXI. HYDROCHARIDACEÆ. Lindl.

The Frog-bit Tribe.

Description.—Aquatic plants, with spathaceous, hermaphrodite, or unisexual flowers. Perianth of 6 leaves, the three inner petaloid. Ovary 1 celled, or spuriously 3-9 celled; stigmas 3-9; placentas parietal. Fruit dry or fleshy, indehiscent; seeds exalbuminous: embryo straight, orthotropal. This order ought probably to be placed among the unisexual plants, and close to Naiadaceæ. Its perianth, however, differs from that of the plants in the division Incompletæ.

Distribution.—Found chiefly in Europe, Asia, and North America. Known species about 25.

Properties.—Unimportant.—*Balfour's Outlines of Botany, p.* 495; *Lindl. V. K. p.* 141.

Vallisneria, (*Micheli.*) In honor of Antonio Vallisneri, an Italian botanist.

847. V. spiralis, (*Linn.*) An annual aquatic plant, growing in tanks. Native of N. America, S. France, N. Italy, N. Holland, Coromandel, The Concans, &c.—*Hort. Cal. p.* 617; V. spiraloides, *Roxb. fl. Ind.* III. *p.* 750; *Gra. Cat. B. pl. p.* 200.

848. V. alternifolia, (*Roxb.*) An annual, similar to the above species. It is used for refining sugar. Native of

Coromandel. The Concans, Bengal, &c.—*Roxb. fl. Ind.* III. *p.* 750 ; *Gra. Cat. B. pl. p.* 199, *Hort. Cal. p.* 618.

ORDER CXII. ORCHIDACEÆ. LINDL.

ORCHIS TRIBE.

Description.—Terrestrial or epiphytic herbs, or shrubs, with fibrous or tuberous roots, a short stem or pseudo bulb, entire, often sheathing, leaves, and hermaphrodite showy flowers. Perianth of 6 segments, in two rows, mostly colored, one, the lowest (so situated from the twisting of the ovary) generally differing in form from the rest, and often spurred ; it is called the labellum or lip, and has sometimes 3 marked portions,—the lowest being the hypochilium, the middle the mesochilium and the upper the epichilium. By adhesion or abortion, the parts of the perianth are sometimes reduced to 5 or 3. Essential organs united on a common column or gynostemium. Stamens 3, the 2 outer, sometimes the central one, being abortive ; anthers 2-4-8 celled ; pollen powdery, or adhering in masses called pollinia, attached to the rostellum by a naked or saccate gland. Ovary 1-celled, with 3 parietal placentas, stigma a visicid space in front of the column. Fruit usually a 3 valved capsule, which often opens by six portions, owing to the midribs of the valves separating. Seeds indefinite, exalbuminous, with a loose reticulated episperm ; embryo solid and fleshy. This order is well distinguished by its peculiar gynandrous flowers, labellum and pollinia.

Distribution.—Orchids are found in almost all parts of the world except upon the verge of the frozen zone, and in climates remarkable for dryness. In Europe, Asia, and North America, they are seen growing every where in groves, in marshes and in meadows ; in the drier parts of Africa they are either rare or unknown ; at the Cape of Good Hope they abound in similar situations as in Europe ; but in the hot damp parts of the West and East Indies, in Madagascar, and the neighbouring Islands, in the damp and humid forest of Brazil, in the warm mild parts of central America, and Western Mexico, in the damp tropical parts of India and on the lower mountains of Nepal the Orchidaceous plants flourish in the greatest variety and profusion, no longer seeking their nutriment from the soil, but clinging to the trunks and limbs of trees, to stones and bare rocks, where they vegetate among ferns and other shade-loving plants, in countless thousands. Known species about 3,000.

Properties.—Fragrant, aromatic, tonic, and mucilaginous properties are met with among orchids. The roots of some of the terrestrial species contain much bassorin, and they constitute the nutritious substance called Salep. Blue colouring matter, like indigo, is met with in the leaves and flowers of some species.—*Balfour's Outlines of Botany, p.* 495 ; *Lindl. V. K. p.* 173.

DENDROBIUM, (*Swartz.*) From *dendron*, a tree, and *bios*, life ; in the places of their natural growth, the species are generally found upon trees.

849. D. PIERARDII, (*Roxb.*) A pretty, epiphytical species, growing pendulous from trees, flowers large, yellow, tinged with

pink. The flowers appear in February and March.—*Wight's Icon. fig.* 908 ; *Gra. Cat. B. pl. p.* 204.

EPIDENDRUM, (*Linn.*) From *epi*, upon, and *dendron*, a tree ; the plants are usually found growing on the branches of trees.

850. E. CILIARE, (*W.*) Fringed Epidendrum. Native of the West Indies. Flowers large, white.

BLETIA, (*R. et Pav.*) In honor of Don Louis Blet, a Spanish physician and botanist.

851. B. HYACINTHINA, (*H. K.*) Terrestrial ; flowers somewhat large, beautifully bright-purple. Native of China, Japan.—*Hort. Cal. p.* 625.

EULOPHIA, (*R. Br.*) From *eulophos*, a handsome crest ; in allusion to the labellum bearing elevated lines, or ridges.

852. E. VIREUS, (*R. Br.*) Terrestrial ; flowers large, greenish yellow.—*Wight's Icon. fig.* 913 ; *Gra. Cat. B. pl. p.* 202.

VANDA, (*R. Br.*) *Vanda* is the Sanscrit name of the original species of this genus.

853. V. ROXBURGHII, (*R. Br.*) Roxburgh's Vanda. A splendid species, remarkable for its finely tessellated petals ; is found epiphytical on trees, especially on the mango.—*Wight's Icon. fig.* 916 ; *Gra. Cat. B. pl. p.* 204.

854. V. PULCHELLA, (*R. W.*) Epiphytical ; flowers green or yellowish, passing into white, dashed with purple.—*Wight's Icon. fig.* 1671.

SACCOLABIUM, (*Lndl.*) From *saccus*, a bag, and *labium*, lip ; in allusion to the bagged labellum of all the species.

855. S. GUTTATUM, (*Lindl.*) Spotted Saccolabium. A very handsome epiphytical species ; flowers red and white, racemes pendulous. Paulghaut jungles, on branches of trees. Flowering from June till October, or longer.—*Wight's Icon. fig.* 1745-46.

CYMBIDIUM, (*Swartz.*) From *kymbos*, a hollow recess ; in allusion to the labellum.

856. C. ALOIFOLIUM, (*Swartz.*) Boat Orchis, or Aloe-leaved Cymbidium. Flowers large, dull purple, marked with deeper stripes, whitish-edged, somewhat sweet scented. East Indies.—*Wight's Icon. fig.* 1687-88 ; *Gra. Cat. B. pl. p.* 203 ; *Hort. Cal. p.* 627.

VANILLA, (*Swartz.*) An alteration of *vaynilla*, which is a diminutive of *vaina*, a Spanish word signifying a sheath ; in reference to the cylindrical pod being like the sheath of a knife.

857. V. AROMATICA. (*Swartz.*) True Vanilla. The dried fruit is delightfully aromatic, and is used in the manufacture of chocolate, liqueurs, and various articles of confectionery.—*Lindl.* Native of Brazil.—*Hort. Cal. p.* 133.

858. V. APHYLLA, Leafless Vanilla.—*Wight's Icon. fig.* 931.

ORDER CXIII. ZINGIBERACEÆ OR SCITAMINEÆ. LINDL.

GINGER TRIBE.

Description.—Herbs, with a rhizome, simple sheathing leaves, the veins parallel and diverging from a midrib, and flowers arising from membranous spathes. Perianth tubular, irregular, and in 3 rows, the outer (calyx 3 lobed, the middle (corolla) and inner (staminodes) each 3-parted, with a segment differing from the rest. Stamens 3, free, the two lateral abortive : anthers 2-celled. Fruit a 3-celled capsule or berry. Seeds numerous, abuminous ; embryo in a vitellus.

Distribution.—Nearly all tropical plants ; abundant in the East Indies. Known species 249.

Properties.—The plants of this order have aromatic, stimulating properties, and are used as condiments, and as stomachic remedies. Their flowers are often very gaudy, and their bracts are sometimes finely coloured.—*Balfour's Outlines of Botany, p.* 497 ; *Lindl. V. K. p.* 165.

ZINGIBER, (*Gärtn.*) The Indian name.

859. Z. ZERUMBET, (*Roscoe.*) Broad-leaved Ginger. A perennial ; flowers middle-sized, pale sulphur-coloured. Native of the Moluccas, Cochin-China. Both Peninsulas of India. Bengal, &c.—*Wight's Icon. fig.* 2003 ; *Roxb. fl. Ind.* I. *p.* 48 ; *ed. Carey*, I. *p.* 47 ; *Gra. Cat. B. pl. p.* 207 ; *Hort. Cal. p.* 562.

860. Z. OFFICINALIS, (*Roscoe.*) Common Ginger. Ingee, *Tam.* Ullum, *Tel.* Sont, *Hind.* Udruck, Ada, *Beng.*

Remarks.—The Ginger plant is extensively cultivated in India, from the Himalayas to Cape Comorin. In the former mountains it is successfully reared at elevations of 4 or 5,000 feet, requiring a moist soil. The seeds are seldom perfected on accouut of the great increase of the root. These roots or rhizomes, have a pleasant aromatic odour. When old they are scalded, scraped, dried and are then the white ginger of the shops: if scalded without being scraped, the black ginger. It is not exactly known to what country the ginger plant is indigenous, though Ainslie states it to be a native of China, while Joebel asserts that it is a native of Guinea. The rhizomes when first dug up are red internally and when procured fresh and young are preserved in sugar constituting the preserved ginger of the shops. Essence of ginger is made by steeping ginger in alcohol. With regard to its medical uses, ginger, from its stimulant and carminative properties is used in tooth-aches, gout, rheumatism of the jaw and relaxed uvula, with good effect, and the essence of ginger is said to promote digestion, &c. &c.

CURCUMA, (*Linn.*) Derived from *kurkum,* its Arabic name.

861. C. LONGA, (*Roxb.*) Long-rooted Turmeric. Munjel, *Tam.* Pasoopoo, *Tel.* Huldee, Pitras; *Hind.* Hurida, Huludee, *Beng.* Leaves broad lanceolate, long petioled: bulbs small, and with the palmate tubers inwardly of a deep orange colour: flowers large, whitish, with a tinge of yellow, the tuft greenish white.

Remarks.—Cultivated in most parts of India. According to Rumphius, the Javanese make an oiutment with the pounded roots and rub it over their bodies as a preservation against cutaneous diseases. The root is considered a cordial aud stomachic, and is prescribed by native medical men in diarrhœa. It is also an ingredient in curries. The Natives consider turmeric in powder an excellent application for cleaning foul ulcers. The root in its fresh state has rather an unpleasant smell, which goes off when it becomes dry, the colour is that of saffron and the taste bitter. The Hindoos use it as a favorite application to recent wounds and bruises, leechbites, &c.—*Roxb. fl. Ind.* 1. *p.* 32; *ed. Carey,* 1, *p.* 32; *Gra. Cat. B. pl.* 209; Amomum curcuma, *Gmel.*

KÆMPFERIA, (*Linn.*) In honour of E. Kæmpfer, a German naturalist, who died in 1716.

862. K. OVALIFOLIA, (*Roxb.*) Oval-leaved Kæmpferia. A perennial. Flowers large, white, with the lip purple, its claw purple streaked on a yellow ground. Native of Peninsula of Malacca.—*Roxb. fl. Ind.* 1. *p.* 19; *ed. Carey,* I. *p.* 18; *Gra. Cat. B. pl. p.* 208; *Hort. Cal. p.* 566.

HEDYCHIUM, (*Kœnig.*) From *hedys,* sweet, and *chion,* snow; alluding to the sweet-scented, snow-white flowers of some of the species.

863. H. CORONARIUM, (*Kœnig.*) Sweet-scented Hedychium. A perennial with beautiful large, pure white, fragrant flowers. Native of the Moluccas, Coromandel, Penang, Tavoy, Bengal, &c.—*Roxb. fl. Ind.* I. *p.* 10; *ed. Carey,* I, *p.* 9; *Wight's Icon. fig.* 2010; *Gra. Cat. B. pl. p.* 205 ; *Hort. Cal. p.* 568.

ALPINIA, (*Linn.*) In memory of Prosper Alpini, an Italian botanist.

864. A. NUTANS, (*Roscoe.*) Nodding Alpinia. Poonnag-champa, *Beng.* A perennial. Flowers large, more or less rose-coloured, with the lip orange-yellow on a dark crimson ground ; very showy. Native of Silhet, Coromandel.—*Roxb. fl. Ind.* 1, *p.* 65 ; *ed. Carey, p.* 64 ; *Gra. Cat. B. pl. p.* 206 ; *Wight's Icon.* 2027 ; *Hort. Cal. p.* 571.

865. A. CALCARATA, (*Roscoe.*) A perennial. Flowers large, white, the lip coloured with dark purple veins on a yellow ground. Native of China.—*Roxb. fl. Ind.* I. *p.* 69; *ed. Carey,* 1. *p.* 67 ; *Wight's Icon. fig.* 2028 ; *Gra. Cat. B. pl. p.* 206 ; *Hort. Cal. p.* 571.

COSTUS, (*Linn.*) Derived from its Arabic name, *Gosth.*

866. C. SPECIOSUS, (*Smith.*) Showy Costus. Bomma Kachica, *Tel.* Keoo, *Hind. Beng.*

Remarks.—A very elegant plant, found chiefly near the banks of rivers and other moist shady places. The fresh roots are almost insipid. The natives make a preserve of them, which they deem wholesome and nutritious. The dry root does not at all resemble the Costus arabicus of the shops. *Roxb.* Flowers large, white, inodorous.—*Roxb. fl. Ind.* I. *p.* 59 ; *ed. Carey,* I. *p.* 57 ; *Wight's Icon. fig.* 2014 ; *Gra. Cat. B. pl. p.* 208 ; *Hort. Cal. p.* 572.

ORDER CXIV. MARANTACEÆ OR CANNACEÆ. LINDL.

ARROW-ROOT TRIBE.

Description.—Herbaceous plants closely allied to Zingiberaceæ, from which they differ chiefly in the want of aroma, in having one of the lateral stamens fertile (the other two being abortive,) in the single stamen having a petaloid filament, which bears a 1-celled anther (the other antherine lobe being sterile,) in the style being petaloid, and in the embryo not being contained in a vitellus.

Distribution.—Natives of the Tropics of America, Africa, and Asia. Known species 160.

Properties.—Amylaceous qualities prevail in this order, and starch is prepared from many of the species.—*Balfour's Outlines of Botany, p.* 497 ; *Lindl. V. K. p.* 168.

MARANTA, (*Linn.*) After B. Maranti, a Venetian physician and botanist, who died in 1554.

868. M. ARUNDINACEA, (*Linn.*) West Indian Arrow-root.

Remarks.—West Indian arrow-root resembles potato starch, but is of a *yellowish,* instead of a *bluish* white colour, and the individual granules are less translucent. The fecula is not, as might be supposed from the name, made from the root, but from a peculiar underground stem, or rhizome, which, whilst subterranean, is white and scaly, and contains the fecula in abundance ; but it is afterwards pushed out of the ground and forms a new plant, for the nutrition of which the starch is intended. In procuring the arrow root, these rhizomes are taken up and beaten to a pulp in wooden mortars ; this mass is then well washed in cold water, and the milky-looking fluid is passed through a fine hair sieve and left to settle ; the white sediment is then again washed with pure water, from which it is allowed to subside ; the water is then decanted, and the white sediment laid to dry upon sheets exposed to the sun ; it is then the arrow-root of commerce. That from Bermuda is most celebrated (*Archer.*) Native of tropical America. Cultivated in the W. and E. Indies.—*Hort. Cal. p.* 575.

CANNA, (*Linn.*) The Celtic name for a cane or mat.

869. C. INDICA, (*Linn.*) Indian shot ; so named from the resemblance which the seeds have to small shot.

Common all over India, flowers largish, bright scarlet. In flower nearly throughout the year.—*Roxb. fl. Ind.* I. *p.* 1 ; *ed. Carey, I p.* 1 ; *Gra. Cat. B. pl. p.* 211 ; *Hort. Cal. p.* 576.

870. C. LUTEA, (*Roscoe.*) Yellow-flowered Indian shot. A perennial ; flowers large, yellow. Supposed to be a Native of S. America. *Gra. Cat. B. pl. p.* 211 ; *Hort. Cal. p.* 576.

ORDER CXV. MUSACÆ. LINDL.

THE BANANA TRIBE.

Description.—Plants with underground stems, their petioles forming a spurious aerial stem, their leaves having paralled veins diverging from a midrib, and flowers being bracteated. Perianth irregular and petaloid, 6-parted in 2 rows, Stamens 6, inserted on the parianth. Anthers linear

2-celled, often crested. Fruit a 3-celled loculicidal capsule, or succulent and indehiscent. Seeds albuminous; embryo orthotropal.

Distribution.—Natives of the Tropics. Known species 20.

Properties.—Under the species.—*Balfour's Outlines of Botany, p.* 398; *Lindl. V. K. p.* 163.

MUSA, (*Tournef.*) Altered from the Egyptian Mauz, in honour of Antonius Musa.

871. M. PARADISIACA, (*Linn.*) Common Plantain. Vazhei, *Tam.* Komarettie, *Tel.* Kayla. Mouz, *Hind.* Kach Kula, *Beng.*

Remarks—This extensively cultivated plant is common to both Indies. It is supposed that the Plantain was introduced from Asia into America, and Dr. Royle remarks, that, "if the Plantain and Banana are therefore natives of Asia, which have been introduced, probably by the Spaniards into America, no plants can more strikingly display the benefits derivable to one country from introducing the useful plants of another which is similar in climate." The specific name of the plant under consideration was given by Botanists in allusion to an old notion that it was the forbidden fruit of Scripture; it has also been supposed to be what was intended by the grapes, one bunch of which was borne upon a pole between two men that the spies of Moses brought out of the promised land. The plantain is considered very nutritious and wholesome either dressed or raw, and no fruit is so easily cultivated in tropical countries. Many a cottage in India has its few plantain trees. The Natives use them as a fruit, and in their curries, and the stems of the plantain, laden with their branches of fruit are invariably placed at the entrance of their houses during their marriages or other festivals, appropriate emblems of plenty and fertility. Its succulent roots and large leaves are well adapted for keeping the ground moist even in the hottest months. There are several varieties of plantains, the following are those generally cultivated; *Rusthaulie,* superior table plantain. *Poovalei,* or small Gindi variety, this plantain is the best known in Madras, which though small, is of delicious flavor. *Peievalei,* a small ash coloured sweet fruit. *Monden,* 3-sided coarse fruit; only used by the Natives. *Shev-valei,* large red fruit, and *Putchei laden,* or long curved green fruit, a coarse plantain. In Ameriea, and the Society Isles, the fruit is preserved as an article of trade. Dried plaintains form an article of commerce at Bombay and other parts of the Peninsula. These are merely cut in slices and dried in the sun, and being full of saccharine matter make a good preserve for the table. This plant yields a fine white silky fibre of considerable length, especially lighter than hemp, flax, and aloe fibre by ⅓th or ¼th, and possessing considerable strength. In medicine, the root of the plant beaten up mixed with milk is administered as a draught in vertigo, the juice of the same is diuretic. The leaves from their cooling nature are generally used to dress blisters. The natives eat the stem in their curries.—*Royle's Fibrous Plants of India,* &c. Musa sapientum. *Roxb. fl. Ind. I. p.* 663; *ed. Carey,* II. *p.* 484; *Gra. Cat. B. pl. p.* 222.

872. M. TEXTILIS, (*Nees.*) Manilla Hemp plant.

Remarks.—This valuable plant has been successfully introduced by Colonel Balfour, C. B. from Singapore, in 1858, into the Society's Gardens,

toxicarium, *Roxb. fl. Ind.* II, *p.* 134; *Gra. Cat. B. pl. p.* 216; C. Asiaticum, *Linn.*

881. C. AMABILE, (*Don.*) Flowers very large, white, suffused with crimson, fragrant.—*Hort. Cal. p.* 589; C. superbum, *Roxb. fl. Ind.* II, *p.* 133; *Gra. Cat. B. pl. p.* 216.

882. C. DEFIXUM, (*Ker.*) Veshie moonghee, *Tam.* Kesura chettu, *Tel.* Sookh-dursun, *Beng.* and *Hind.*

Remarks.—The leaves bruised and mixed with castor oil, are useful in whitlows and local inflammations. In Upper India, the juice of the leaves is given in ear-ache. Flowers large, white, during the night fragrant.—*Hort. Cal. p.* 590; C. Asiaticum, *Roxb. fl. Ind.* II. *p.* 127; *Gra. Cat. B. pl. p.* 225.

PANCRATIUM, (*Linn.*) From *pan*, all, and *kratys*, potent; supposed medicinal virtues.

883. P. VERECUNDUM, (*Soland.*) Flowers largish, white. Native of India.—*Hort. Cal. p.* 594; P. biflorum and triflorum, *Roxb. fl. Ind.* II. *p.* 125-26.

884. P. ZEYLANICUM, (*Linn.*) Flowers large, pure white, faintly fragrant. Native of the Moluccas, Ceylon.—*Roxb. fl. Ind.* II. *p.* 124; *Gra. Cat. B. pl. p.* 216; *Hort. Cal. p.* 594.

ALSTRŒMERIA, (*Linn.*) Named in honor of Baron Claudius Alstrœmir, Swedish botanist.

885. A. SALSILLA, (*Willd.*) A small twining plant, flowers bright, scarlet green and crimpson striped. Native of S. America.

AGAVE, (*Linn.*) The name has been altered from *agavos*, admirable.

886. A. AMERICANA, (*Linn.*) American Aloe. Anai Kutthalei, *Tam.* Sagi Mutta, *Tel.* Rakas, *Hind.*

887. A. *a.* VARIEGATA. Variegated American Aloe.

888. A. VIVIPARA, (*Linn.*) Bastard Aloe. Kutthalei, *Tam.* Peetha-Kalabantha, *Tel.*

FOURCROYA, (*Vent.*)

889. F. GIGANTEA, (*Vent.*) Seemay Kathalay, *Tam.* This plant is very ornamental. It yields a valuable fibre. Native of S. America.

ORDER CXVIII. BROMELIACEÆ. LINDL.

THE PINE APPLE TRIBE.

Description.—American and chiefly tropical plants, with rigid, channelled, often scurfy, and spiny leaves, and showy flowers. Outer perianth 3-parted, persistent ; inner of 3 withering leaves. Stamens 6. inserted in the tube of the perianth ; anthers introrse. Style single. Fruit capsular or succulent, 3-celled, many-seeded. Embryo minute, in the base of mealy albumen.

Properties.—Many of the plants grow in an epiphytic manner, and are called air-plants. Some supply edible fruit, green colouring matter, and valuable fibres.—*Balfour's Outlines of Botany, p.* 500 ; *Lindl. V. K. p.* 147.

ANANAS, (*Plum.*) From *nanas*, the Guiana name.

890. A. SATIVUS, (*Schult.*) Common Pine-apple. Anasee, *Tam.* Ananas, *Tel.* Perennial, 2-3 feet : leaves ciliate with spinous points ; calyx 3-parted ; petals 3 ; spikes tufted ; flowers small, bluish.—Bromelia sativa, *Roxb. fl. Ind.* II. *p.* 116, Ananassa sativa, *Lindl.*

Remarks.—The pine-apple has long been domesticated in the East Indies, and is now found in an almost wild state in most parts of the Peninsula, Northern Provinces, and Ceylon. The Portuguese appear to have first introduced the seeds from the Moluccas. It is abundant in China and the Philippine Islands. The delicious flavour of the fruit is well known, and is greatly heightened by cultivation, being somewhat acrid in its wild state. The most important use of the pine-apple plant consists in the fine white fibres yielded by the leaves. These have been formed into the most delicate fabrics, as well as fishing lines, ropes, &c. —*Royle's Fibrous Plants of India.*

891. A. STRIATIFOLIA, (*Roxb.*) Ribbon leaved Pine-apple. This is a very ornamental variety. Native of Malacca. —*Hort. Cal. p.* 615.

BILLBERGIA, (*Thunb.*) Named after J. G. Billberg, a Swedish botanist.

892. B. ZONATA. A pretty little plant, with small, white flowers. Introduced from the Calcutta Botanic Gardens, 1859.

ORDER CXIX. LILIACEÆ. LINDL.

THE LILY TRIBE.

Description.—Herbs, shrubs, or trees, with bulbs, corms, rhizomes, or fibrous roots, simple, sheathing or clasping leaves, and regular flowers. Perianth coloured, of 6 leaves, or 6-cleft. Stamens 6, inserted in the perianth; anthers introrse, ovary 3-celled; style 1; stigma simple or 3-lobed. Fruit trilocular, capsular, or succulent. Seeds in 1 or 2 rows, sometimes in pairs or solitary; albumen fleshy.

Distribution.—Native of temperate and tropical regions; in the latter we meet with arborescent species, such as the Dragon-trees.

Properties.—Some of the plants are used as emetics and purgatives, while orthers are stimulant and diaphoretic. Some yield resinous and astringent matter, while others supply valuable materials for manufactures.—*Balfour's Outlines of Botany, p.* 501; *Lindl. V. K.p.* 200.

LILIUM, (*Linn.*) Derived from the Celtic word *li,* signifying whiteness; on account of the beautiful white flowers of the original species.

893. L. LONGIFLORUM, (*Wall.*) Large flowered lily. Flowers large, white, fragrant.

GLORIOSA, (*Linn.*) Derived from *gloriosus,* glorious; because of the magnificent flowers.

894. G. SUPERBA, (*Linn.*) Superb Gloriosa. Caateejan, *Tam.* Cariari, *Hind.* Glatchandul, *Beng.* Climbing with herbaceous stem: leaves cirrhiferous, ovate-lanceolate, inferior ones oblong: corolla 6-petalled: petals reflexed: flowers yellow and crimson mixed: capsule 3-celled.—*Wight's Icon. fig.* 2047.

Remarks.—This splendid creeper appears after the rains, and Dr. Roxburgh says it is one of the most ornamental plants any country can boast of. The root of the plant is reckoned very poisonous. Common throughout India.—*Roxb. fl. Ind.* II, *p.* 143; *Gra. Cat. B. pl. p.* 221; Methonica gloriosa, *Lam.*;—*Hort. Cal. p.* 655.

AGAPANTHUS, (*L' Herit.*) Named in allusion to the lovely and showy flowers, from *agape,* love, and *anthos,* a flower.

895. A. UMBELLATUS, (*L' Herit.*) African blue lily. Flowers largish, blue. Native of the Cape of Good Hope.

SANSEVIERA, (*Thunb.*) In honour of M. Sansevier, a Swedish botanist,

896. S. ZEYLANICA, (*Roscoe.*) Bowstring Hemp-plant. Marool, *Tam.* Chaga Laga, *Tel.*

Remarks.—This plant is well known for the excellent fibres it yields. It is easily propagated by cuttings and thirves in almost any soil, throwing up abundance of fresh rootshoots and thus extending itself in every direction. Flowers small, greenish white. Common.—*Roxb. fl. Ind.* II. *p.* 161; *Gra. Cat. B. pl. p.* 218.

897. S. CYLINDRICA. Ife. This plant is a native of Angola, " where the Portuguese manufacture from its fibre, admirable cables and cordage for their Dock-yards :—and this fibre is now found to be the best for deep sea sounding, on account of its strength and pliability." Plants of the Ife were forwarded to the Society's Gardens by Sir W. J. Hooker, F. L. S. 1859.

ALOE, (*Tournef.*) Derived from *alloeh*, the Arabic name of this genus.

898. A. INDICA, (*Royle.*) Indian Aloe. Kutthalei, *Tam.* Kalabunda, *Tel.* Gheekomar, *Hind.* Ghrito-komaree, *Beng.*

Remarks.—This is a species of aloe with large red flowers. A kind of aloes but of an inferior description is obtained from it. Cultivated in gardens.—*Hort. Cal. p.* 66; A perfoliata, *Roxb. fl. Ind.* II, *p.* 167; *Gra. Cat. B. pl. p.* 218.

899. A. BARBADENSIS, (*Mill.*) Common Hedge Aloe. Kutthalei, *Tam.*

Remarks.—This species of aloe, which is properly a native of Greece, or as some say of the Cape Colony, has long been naturalized in both Indies. It yields what is known as the Barbodoes aloes. This substance is of a dark or redish-brown colour, and has a most unpleasnt odour. In quality it is far inferior to the real Socotrine aloes (*A. Socotrina.*) As a drug aloes is reckoned extremely valuable, and its medical properties are very numerous, although a perient, yet unlike other cathartics, the effect is not increased if given in large doses beyond a certain point. To persons predisposed to appoplexy it is more beneficial than most other purgatives. The compound decoction is a valuable emenagogue, particularly when combined with preparations of iron. One of the best modes of covering the unpleasant taste of aloes when given liquid is in compound tincture of lavender.—*Hort. Cal. p.* 660; Aloe vulgaris, *Lam.*

YUCCA, (*Linn.*) The name of the plant in Peru.

900. Y. GLORIOSA, (*Linn.*) Splendid Adam's Needle. This handsome plant is a native of Peru, and N. America. It blossoms in the cold season, its panicle of elegant white flowers

attaining a height of 6 or 7 feet.—*Gra. Cat. B. pl. p.* 221 *Hort. Cal. p.* 662.

901. Y. GLAUÇESCENS, (*Haw.*) Narrow-leaved Adam's Needle. This plant yields a good fibre, as also the above species. Has not flowered in the gardens. Native of North America.—*Hort. Cal. p.* 662; Y. angustifolia, *Hortul.* not *Pursh.* nor *Spreng.*

ALLIUM, (*Linn.*) Derived from the Celtic *all*, signifying hot or burning.

902. A. ASCALONICUM, (*Linn.*) Shallot. Cultivated in gardens.

903. A. CEPA, (*Linn.*) Common Onion. Cultivated in gardens. The Bombay onion is reckoned the best for growing in Madras gardens.

904. A. SATIVUM, (*Linn.*) Garlic. Cultivated in gardens.

905. A. PORRUM, (*Linn.*) Leek. Cultivated in gardens.

ASPARAGUS, (*Linn.*) Derived from *a*, intensive, and *sparasso*, to tear; some of the species being armed with strong prickles.

906. A. RACEMOSUS, (*Willd.*) Challa, *Tel.* Sada-bori, *Hind.* Suth-moolie, *Beng.* A straggling, climbing shrub: branches striated: leaves fascicled, linear, falcate: thorns solitary, reflexed: racemes many-flowered: flowers small, white.

Remarks.—This plant says Roxburgh, will perfume the air to a considerable distance, owing to the delightful fragrance of its flowers. The root boiled in milk is given in bilious affections. It is necessary to remove the bark previous to administering it, as it is considered poisonous. The leaves boiled and mixed with ghee are applied externally to promote suppuration in boils and tumours. A native of various parts of India; climbing among hedges and bushes.—*Roxb. Fl. Ind.* II. *p.* 151; *Wight's Icon. fig.* 2056.

907. A. SARMENTOSUS, (*Willd.*) Climbing Asparagus. Tanneer-vit-tang, *Tam.* Challag hedaloo, *Tel.*

Climbing shrub: branches armed with crooked spines: leaves linear-lanceolate: flowers small: berries red: 3-lobed.

Remarks.—The root, which is long, white, and fleshy, is bruised and soaked in water, and the latter, if drunk, is said by the natives to be a remedy in preventing small-pox from becoming confluent. In Ceylon, the root is mixed with milk and eaten. The roots are often candied, in which state they are sometimes brought from China. They are also pickled in vinegar, and used as a tonic, and also boiled in oil, and applied to diseases of the skin.—*Gra. Cat. B. pl. p.* 221.

908. A. OFFICINALIS, (*Linn.*) Common Asparagus. Cultivated in gardens. Native of Europe.

DRACÆNA, (*Vandell.*) From *drakaina*, a female dragon; the inspissated juice becomes a powder, like the Dragon's blood.

909. D. TERMINALIS, (*Willd.*) Terminal flowering Dracæna. A pretty shrub; flowers in terminal panicles, small, white. In Java the root is considered a valuable medicine in dysenteric affections. Native of the Moluccas, China.—*Roxb. fl. Ind.* II. *p.* 156; *Wight's Icon. fig.* 2054; *Hort. Cal. p.* 675.

910. D. FERREA, (*Linn.*) A pretty shrub, with leaves of a reddish or ferruginous hue; flowers small, pale-purple. Native of China, Moluccas, Penang.—*Roxb. fl. Ind.* II, *p.* 156; *Gra. Cat. B. pl. p.* 221; *Hort. Cal. p.* 675.

911. D. ENSIFORMIS? A large shrubby plant. Has not flowered in the Madras gardens.

The substance called gum dragon, so well known in medicine, is the juice of *Dracæna Draco*. [Dragon's Blood is derived from other sources also.]

ORDER CXX. PONTEDERIACEÆ. LINDL.

THE PONTEDERIA TRIBE.

Description.—Aquatic plants, with leaves sheathing at the base, petioles occasionally dilated, and spathaceous flowers, either solitary or in spikes. Perianth coloured, tubular, 6-parted, irregular, persistent. Stamens 6 or 3, perigynous; anthers introrse. Capsule sometimes slightly adherent, 3-celled, 3-valved, loculicidal. Seeds numerous; placenta central; albumen mealy.

Distribution.—Natives of America, India, and Africa. Known species 30.

Properties.—Unimportant.—*Balfour's Outlines of Botany, p.* 502; *Lindl. V. K. p.* 206.

PONTEDERIA, (*Linn.*) In honor of Julius Pontedera, Professor of botany at Padua.

912. P. VAGINALIS, (*Linn.*) Perennial; leaves cordate, acute, from five to seven nerved: racemes peduncled, after the flowers decay, recurved: flowers largish, bright blue: a native of the borders of sweet water lakes or marshy places. Common. —*Roxb. fl. Ind.* II. *p.* 121; *Gra. Cat. B. pl. p.* 222; *Hort. Cal. p.* 645.

913. P. HASTATA, (*Linn.*) Perennial: leaves triangular, or hastate, pointed, many nerved racemes subsessile erect; flowers largish, bright blue violet. Found in similar situations with the above.—*Roxb. fl. Ind.* II. *p.* 121; *Gra. Cat. B. pl. p.* 222; *Hort. Cal. p.* 645.

ORDER CXXI. COMMELYNACEÆ. LINDL.

THE SPIDER-WORT TRIBE.

Description.—Herbs, with flat leaves, usually sheathing at the base. Outer perianth of 3 parts, herbaceous; inner also 3, coloured, sometimes cohering. Stamens 6 or fewer, hypogynous. Anthers introrse; ovary 3-celled; placenta central; style 1, capsule 2-3 celled, 2-3 valved, loculicidal. Seeds with a linear hilum; embryo pulley-shaped, in a cavity of the albumen, remote from the hilum. In *Tradescantia* the filaments are provided with jointed hairs, which show rotation in their cells.

Distribution.—Chiefly found in the East and West Indies, New Holland, and Africa.

Properties.—Unimportant.—*Balfour's Outlines of Botany, p.* 503; *Lindl. V. K. p.* 188.

COMMELYNA, (*Dillen.*) In honor of J. and G. Commelin, famous Dutch botanists.

914. C. BENGALENSIS, (*Linn.*) Common Spider-wort. An annual; flowers small, bright blue, common all over India. —*Wight's Icon. fig.* 2065; *Roxb. fl. Ind.* I. *p.* 171; *ed. Carey,* I. *p.* 176; *Gra. Cat. B. pl. p.* 223; *Hort. Cal. p.* 676.

915. C. COMMUNIS, (*Linn.*) Spider-wort. An annual, common in moist places, flowers small, bright blue.—*Roxb. fl. Ind.* I. *p.* 171; *ed. Carey,* I. *p.* 175; *Hort. Cal. p.* 677; *Gra. Cat. B. pl. p.* 223.

TRADESCANTIA. (*Linn.*) In honor of John Tradescant, gardener to Charles I.

916. T. DISCOLOR. (*L' Herit.*) Perennial, flowers small white, soon withering. Native of the shores of the Mexican Gulf.—*Gra. Cat. B. pl. p.* 223 ; *Hort. Cal. p.* 678.

ORDER CXXII. PALMACEÆ. LINDL.

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THE PALM TRIBE.

Description.—Arborescent plants with a simple, sometimes branched stem, marked by the bases of the leaves or their scars, leaves in terminal clusters, pinnate or fan-shaped, flowers unisexual or hermaphrodite, on a simple or branched spadix, inclosed in a 1 or many valved spathe. Perianth in two verticils, each of 3 parts. Stamens usually 6, seldom 3, sometimes indefinite. Ovary 1-3-celled, with a single ovule in each cell. Fruit a nut or drupe or berry, albumen cartilaginous or hard, often ruminate, with a central cavity ; embryo in a particular cavity remote from the hilum, its cotyledons often becoming enlarged during germination, and filling the central cavity.

Distribution.—Chiefly tropical plants, requiring a mean temperature of 78° ·2, to 81° ·5 F. Some, however, extend to temperate regions. *Chamærops humilis*, the dwarf fan-palm, is found a native in the south of Europe, and *C. Palmetto* grows in the milder parts of North America. Some have slender reed like stems, others attain a considerable diameter. Some have a low caudex, or a subterranean stem, while others have an erect trunk 190 feet high. The known species amount, according to Martius, to 582, of which 91 have fan-shaped leaves.

Properties.—Palms yield numerous important products, and they are applied to a great many uses, they supply starch, sugar, oil, wax, and edible fruits ; their buds are eaten like vegetables ; their leaves form coverings for habitations, and materials for manuscripts, the reticulum makes coarse cloth, and the saccharine juice is sometimes fermented, so as to form a spirit called arrack, or palm-wine called toddy.—*Balfour's Outlines of Botany, p.* 505 ; *Lindl. V. K. p.* 134.

ARECA, (*Linn.*) When an old tree it is called in Malabar *areec*, when quite young *perynga.*

917. A. CATECHU, (*Linn.*) Areca or Betel-nut palm. Paak-marum, *Tam.* Poka-chettu, *Tel.* Gooa, *Beng.* Souparee, *Hind.*

Remarks.—In appearance, the Areca Palm is perhaps the most graceful and elegant among Indian Palms. Its native place is unknown but it is extensively distributed in India. It yields the Betel-nut of commerce. These nuts when young, are, in conjunction with other things, prescribed in decoction, for costiveness and dyspepsia. They are much relished by the natives, being chewed with the leaf of the betel pepper, (*Chavica betel*), and a little chunam. They sadly discolour the teeth, but natives imagine that they fasten them, and clean the gums. A strong decoction of the nut is used in dyeing. Roasted and powdered they make an excellent charcoal powder for the teeth. The catechu which they yield is of a very inferior quality. Like most of the palm tribe the trunk is much used for

ordinary building purposes. The spathe which stretches over the blossoms, and which is called Pauk muttay, is a fibrous substance with which the Hindoos make vessels for holding arrack, water, &c., also cups, dishes, and small umbrellas. It is so fine that it can be written on with ink. A decoction of the roots is applied to sore lips. The juice of the tender leaves mixed with oil is applied externally in lumbago. This palm is found chiefly in Malabar, N. Bengal, the lower slopes of the Mountains of Nepaul, and the coast of Ceylon.—*Roxb. fl. Ind.* III, *p.* 615; *Griffith's Palms. Useful Plants of India ; Gra. Cat. B. pl. p.* 225.

918. A. OLERACEA, (*Linn.*) Cabbage Palm.

Remarks.—A very handsome and graceful tree. The green tops of the trunk is eaten in the West Indies, both raw and cooked.—*Gra. Cat. B. pl. p.* 225; Oreodoxa oleracea, *Endl.*; *Hort. Cal. p.* 636; Euterpe caribæa, *Spreng.*

919. A. LUTESCENS. ?

920. A. RUBRA. ?

CARYOTA, (*Linn.*) The Greeks applied this name to a cultivated date.

921. C. URENS, (*Linn.*) Malabar Sago Palm. Coondapanna, *Tam.* Teeroogoo, *Tel.*

Remarks.—This palm, where it grows in abundance, is highly valuable to the natives. It yields them during the hot season, an immense quantity of sap. The constituents of this, being such as may easily be made to undergo the fermentation process, we find that instead of being boiled down to procure sugar, the sap is allowed to undergo the vinous fermentation, when it forms Palm wine, often called *Toddy.* This being distilled, yields the spirit called *Arrack,* from the Arabic Aruk, the general term for spirit. The best trees will yield at the rate of 100 pints of sap in the 24 hours. The pith of the trunk of old trees is said to be equal to the best sago. The natives make it into bread or boil it into thick gruel. A fibre is prepared from this palm used for fishing lines and bow strings, which is the Indian gut of the English market. The woolly substance found at the bottom of the leaves is employed occasionally for caulking ships. Cultivated in various parts of India.—*Roxb. fl. Ind.* III. *p.* 625; *Gra. Cat. B. pl. p.* 226; *Hort. Cal. p.* 637.

CALAMUS, (*Linn.*) Taken from *kalam,* signifying a reed, in Arabic.

922. C. ROTANG, (*Linn.*) Rattan cane Palm. Peremboo, *Tam.* Bettam, *Tel.* Bet or Beta, *Beng. Hind.*

Remarks.—This yields common rattan. The extensive uses to which canes are applied, both in the entire and split state are well known. They are abundant in all the moist tropical parts of the east, both on the Continent and in Islands. Though the several species yielding the rattans of commerce have not been distinctly identified, yet it is believed that this one is a stouter kind than the others. *C. Royleanus,* is supposed to

yield the Rattans collected in the Deyra Doon, while *C. Roxburghii* yields those collected in Southern latitudes, and a variety of species yield the thin Rattans of different localities. Some Rattans grow to an immense length, climbing over the highest trees in the forest even as long as 500 or 600 feet. Such have been the dimensions given to the *C. Extensus* a native of Silhet. This species is a native of Bengal and the Coromandel Coast, and is common in the S. Concans; delights in a rich, moist soil, where there are bushes, and trees for it to climb on.—*Roxb. fl. Ind.* III. *p.* 777; *Gra. Cat. B. pl. p.* 225; *Hort. Cal. p.* 639; C. Roxburghii, *Griffiths; Royle, &c.*

ZALACCA, (*Reinw.*)

923. Z. ———? Introduced from Burmah, 1856.

BORASSUS, (*Linn.*) The immortal Linnæus applied this name to the spatha of the date.

924. B. FLABELLIFORMIS, (*Linn.*) Palmyra-tree. Pannei, *Tam.* Tadi, *Tel.* Tal-gachh. *Beng.* Thah'd. *Hind.*

Remarks.—The Palmyra is common all over India. Its favourite soil is a low sandy plain, and immense groves of it occur on the coast of Malabar from Cape Comorin to Calicut, but the Northern part of Ceylon, and from Tinnevelly to Madras are the great Palmyra regions, though the trees are found skirting the Bay south to Singapore and in all the islands of the Archipelago. In the Tenasserim Provinces also, it is the most generally diffused of all the Palms. "The number of uses for which the Palmyra is employed, may be said to be almost infinite; indeed one of the eastern languages, the Tamil, spoken in a portion of the region which the tree acknowledges as its native country, possesses a poem entitled 'Tála Vilásam,' enumerating no fewer than 801 different purposes to which the Palmyra may be applied, and this poem by no means exhausts the catalogue." The following are few of its many uses. The seeds, when young, are eaten by the natives, being jelly-like and palatable. The tree, during the first part of the season, yields a pretty large quantity of toddy (palm wine). This is either drank fresh drawn from the tree, or boiled down into a coarse kind of rod called jaggery, or it is fermented for distillation. The wood, near the circumference of old trees, is very hard, black, heavy, and durable. By the natives the leaves are universally used for writing upon with an iron style. They are also employed for thatching houses, for making small baskets, mats, &c., and some are also formed into large fans, called vissaries. The fibres of the leaves (*Palmyra nar*) are employed on the Madras side for making twine and small ropes. They are about two feet in length, strong, wiry and not unlike those of Esparto; near the base of the leaves there is also found a fine down, which is used for straining liquors through, and also for stopping bleeding from wounds. *Royle.* The fruits are much prized by the people of India, and are eaten raw or roasted. The young plants when about two or three months old, are much used as an article of food, and are grown for that purpose.—*Roxb. fl. Ind.* III, *p.* 790; *Gra. Cat. B. pl. p.* 226; *Royle's Fibrous Plants of India.*

CORYPHA, (*Linn.*) From *koryphe*, the summit; the leaves are only on the top of the trees.

925. C. UMBRACULIFERA, (*Linn.*) Talipot or Fan Palm. Candapana, *Tam.* Sidalum, *Tel.* Talee, *Beng.*

Remarks.—This is the well known Fan Palm of Ceylon. Its large broad fronds (leaves) are used for thatching, and also for writing on with an iron style. The dried leaf is very strong, and is commonly used for umbrellas by all classes. It opens and shuts like a lady's fan, and is remarkably light. Little bowls and other ornaments are made from the nuts, and when polished and coloured red are easily passed off for genuine coral.—*Roxb. fl. Ind.* II. *p.* 177; *Gra. Cat. B. pl. p.* 224; *Hort. Cal. p.* 640.

LIVISTONIA, (*R. Brown.*) In honour of Patrick Murray Livistone, near Edinburgh.

926. L. MAURITIANA, (*Wall.*) This is a very elegant and highly ornamental palm. Native of the Mauritius.—*Hort. Cal. p.* 641.

PHŒNIX, (*Linn.*) The Greek name of the date.

927. P. FARINIFERA, (*Roxb.*) Eethie, *Tam.* Chiruta-ita, *Tel.* Shrub 2-3 feet: leaves pinnate: leaflets long narrow, pointed: spathe axillary, one valved: spadix erect, much ramified: branches simple, spreading: *male* flowers, calyx 3-toothed, petals 3, stamens 6: *female* flowers, petals 3; berry black, shining.

Remarks.—The sweet pulp of the seeds of this dwarf species of date palm is eaten by the natives. The leaflets are made into mats, and the petioles into baskets. A large quantity of farinaceous substance, which is found in the small stem is used as food in times of scarcity.—*Roxb. fl. Ind.* III. *p.* 785; *Griffith's Palms*; *Hort. Cal. p.* 642; *P.* pusilla.

928. P. SYLVESTRIS, (*Roxb.*) Wild Date Palm. Eetchumpannay, *Tam.* Eeta, *Tel.* Seyndie ka jah'd, *Hind.* Khajoor, *Beng.*

Remarks.—The wild date is common all over India. This tree yields Palm-wine during the cold season. But free extraction destroys the appearance and fertility of the tree, the fruit of those that have been cut for drawing off the juice being very small. The mode of drawing off the juice is by removing the lower leaves and their sheaths, and cutting a notch into the pith of the tree near the top, whence it issues and is conducted, by a small channel made of a portion of the Palmyra Palm leaf, into a pot suspended to receive it. On the coast of Coromandel this Palm-juice is either drunk fresh from the tree, or boiled down into sugar

or fermented for distillation, when it gives out a large portion of ardent spirit, commonly called *Pariah-arrack* on the coast of Coromandel. There, as well as in Guzerat, and especially in Bengal, the Khajoor is the only tree whose sap is much employed for boiling down to sugar, mixed more or less with the juice of the sugar-cane. At the age of from 7 to 10 years, when the trunk of the trees will be about 4 feet high, they begin to yield juice, and continue productive for 20 or 25 years. It is extracted from Nov. till Feb., during which period, each tree is reckoned to yield from 120 to 240 pints of juice, which averages 180 pints. Every 12 pints or pounds is boiled down to one of Goor or Jaggary, and 4 of this yield one of good powder sugar, so that the average produce of each tree is about 7 or 8 pounds of sugar annually. This date sugar is not so much esteemed as cane-sugar and sells for about one-fourth less. (Roxb.) Baskets, mats and punkahs are made with the leaf stalks.—*Roxb. fl. Ind.* III. *p.* 787 ; *Gra. Cat. B. pl. p.* 224 ; *Hort. Cal. p.* 642 ; *Griffith's Palms, p.* 228 ; *Elate Sylvestris, Linn.*

Cocos, (*Linn.*) From the Portuguese word *coco* ; the end of the nut resembles a monkey's head.

929. C. NUCIFERA, (*Linn.*) Cocoa-nut Palm. Tenna marum, *Tam.* Tenkoi chettu, *Tel.* Narel ka jah'd, *Hind.* Narikel, *Beng.*

Remarks.—The principal distribution of the Cocoa palm lies within the intertropical regions of the old and new worlds, requiring a mean temperature of 70°. It is cultivated in great abundance in the Malabar and Coromandel Coasts, Ceylon, the Laccadives, and, everywhere in the Islands of the Eastern Archipelago. That the Cocoanut is one of the most valuable of trees of tropical regions has long been known. It is therefore well worthy of cultivation in such situations as are suitable to it ; as it abounds in products useful as articles of diet, as well as for commerce and manufactures. The *root* is sometimes masticated instead of the Betle-nut. In Brazil, baskets are made of the *small fibres.* The *hard case of the stem* is converted into drums, and used in the construction of huts. The lower part is so hard as to take a beautiful polish, when it resembles agate. The reticulated substance at the base of the leaf is formed into cradles, and, as some say, into a coarse kind of cloth. The *unexpanded terminal bud* is a delicate article of food. The *leaves* furnish thatch for dwellings, and materials for fences, buckets, and baskets ; they are used for writing on, and make excellent torches ; potash in abundance is yielded by the ashes. The *midrib of the* leaf serves for oars. The *juice of the flower and stems* is replete with sugar, and is fermented into excellent wine, or distilled into arrack, or the sugary part is separated as Jaggary. The tree is cultivated in many parts of the Indian islands, for the sake not only of the sap and *milk* it yields, but for the kernel of its fruit, used both as food and for culinary purposes, and as affording, a large proportion of *oil* which is burned in lamps throughout India, and forms a large article of export to Europe. The fibrous and uneatable rind of the fruit is not only used to polish furniture, and to scour floors of rooms, but is manufactured into a kind of cordage (*Coir*), which is nearly equal in strength to hemp, and which Roxburgh designates as the very best of all materials for cables, on account of its great elasticity and strength. The sap of this as well as of other palms is found to be the simplest

and easiest remedy that can be employed for removing constipation in persons of delicate habit, especially European females.—*Roxb. fl. Ind.* III. *p.* 614 ; *Gra. Cat. B. pl. p.* 225 ; *Hort. Cal.* p. 643.

ORDER CXXIII. PANDANACEÆ. LINDL.

THE SCREW-PINE TRIBE.

Description.—Trees or bushes, often branching dichotomously, or in a candelabra-like manner, having adventitious roots ; leaves imbricated, linear lanceolate or pinnate or fan-shaped, and spiny ; flowers unisexual or polygamous, spathaceous, covering a spadix completely. Perianth wanting, or a few scales. Stamens numerous ; anthers 2-4-celled. Ovaries 1-celled, collected into parcels ; stigmas sessile ; ovules solitary or numerous. Fruit either 1-scaled fibrous nuts or many-seeded berries. Albumen fleshy ; embryo minute, without a lateral slit.

Distribution.—Natives of tropical regions, and abundant in insular situations. Known species about 80 or 90.

Properties.—The seeds of the Screw-pines are eatable, and their spermoderm contains numerous crystals.' The flowers of some species are fragrant, and the juices of *Nipa* is fermentescible.—*Balfour's Outlines of Botany, p.* 506 ; *Lindl. V. K. p.* 130.

PANDANUS, (*Linn.*) From *pandang*, a word in the Malay language signifying conspicuous.

930. P. ODORATISSIMUS, (*Linn. fil.*) Fragrant Screw-pine, or Caldera bush. Thazhum, *Tam.* Mogheli, *Tel.* Kea, *Beng.* Keura, *Hind.*

Remarks.—An elegant shrub, from 6 to 10 feet high, (sometimes attaining the size of a small tree,) with fusiform roots issuing from the stem. Leaves from 3 to 5 feet long ; at the extremities of the branches, drooping, smooth and shining ;—the margins and back armed with sharp spines. Flowers white, very sweet scented. They are generally sold in the bazars. The fusiform, tough, fibrous *roots* are used by basket-makers to tie their work with, and on account of their softness, by the natives, as corks. Matting and package bags are made of them at the Mauritius. Avenues are formed of the shrubs themselves, in China, Cochin-China, and Mauritius, and in the two former countries elephants are fed on them. The flowers are very fragrant and from them is made an oil known as the *Keora oil.* The perfume is extracted chiefly from the male flowers. The lower yellow pulpy part of the drupe, is sometimes eaten by the natives in times of scarcity and famine, the same is the case with the white base of the leaves, which is consumed raw or boiled.—*Roxb*, Native place uncertain. Cultivated over all the warmer parts of Asia. Common on the sea beach, and on banks of water courses near Madras.—*Roxb. fl. Ind.* III. *p.* 738 ; *Gra. Cat. B. pl. p.* 227 ; *Hort. Cal. p.* 682 ; Athrodactylis spinosa, *Forst.*

931. P. MOSCHATUS, (*Rumph.*) Small tree, diffuse : leaves ensiform, channelled, unarmed, and polished : flowers

small, white, very fragrant. Native of the Moluccas, Cochin-China.—*Hort. Cal. p.* 682; P. inermis, *Roxb. fl. Ind. III. p.* 744; P. lævis, *Lam.*

ORDER CXXIV. TYPHACEÆ. DC.

THE BULRUSH TRIBE.

Description—Herbs, growing in marshes or ditches, having stems without nodes, rigid, ensiform leaves, and monœcious flowers on a spadix without a spathe. Perianth 3 or more scales, or a bundle of hairs. Stamens 1-6, distinct or monadelphous; anthers innate. Ovary solitary, 1-celled; ovule solitary, pendulous. Fruit dry or spongy, indehiscent, 1-celled, angular by pressure. Seed solitary, pendulous, with a membranous spermoderm adhering to the pericarp. Embryo in the axis of mealy albumen, straight with a lateral cleft; radicle next the hilum.

Distribution.—The plants of this order are most abundant in northern countries. Known species 13.

Properties.—Starch is a product of the rhizomes of many species of Typha, and the pollen, which is very abundant, is inflammable, and is also used for food.—*Balfour's Outlines of Botany, p.* 507; *Lindl. V. K. p.* 126.

TYPHA, (*Tournef.*) So named from *typhos*, a marsh; habitat of the species.

932. T. ELEPHANTINA, (*Roxb.*) Elephant Grass. Hogla, *Beng.* Culms round, smooth, glossy, jointed at the insertion of the leaves, 6-10 feet. Margins of tanks and beds of rivers throughout India.

Remarks.—Elephants are fond of this grass. It is of great importance for binding the soil on the banks of the Indus with its long tortuous roots of which great care is taken when the culms are cut down to make matting of. They are tied in bundles and used as buoys to swim with, like *sedges* in England (*J. Grah.*) The pollen is abundant in this as well as the following species, and if a light be applied to it, a flash of fire is produced.—*Roxb. fl. Ind. III. p.* 566; *Gra. Cat. B. pl. p.* 227; *Hort. Cal. p.* 693.

933. T. ANGUSTIFOLIA, (*Linn.*) Ram-hogla, *Beng.* Leaves used for making mats. Found in similar places with the former; flowering time also the same, but this is a much smaller and rarer plant in India.—*Roxb. fl. Ind.* III. *p.* 567; *Hort. Cal. p.* 693.

ORDER CXXV. ARACEÆ. LINDL.

THE ARUM TRIBE.

Description—Herbs or shrubby plants, sometimes climbing, often with corms; leaves sheathing at the base, convolute in æstivation, sometimes compound, and usually with branching veins: flowers monœcious, on a

spadix, mostly with a spathe. Perianth wanting. Stamens definite or indefinite; anthers extrorse, 1 or 2-celled or more. Ovary with 1 or more cells. Fruit succulent; seeds pulpy; embryo in the axis of fleshy and mealy albumen, with a lateral cleft.

Distribution.—Abundant in tropical climates; rare in cold or temperate regions. Known species 170.

Properties.—Acredity prevails in the order, and many of the plants are irritant poisons. The corms sometimes supply starch, which is separated from the acrid matter by washing.—*Balfour's Outlines of Botany, p.* 507; *Lindl. V. K. p.* 127.

CRYPTOCORYNE, (*Fischer.*) From *kryptos*, hidden, and *koryne*, a club; shape of flowers.

934. C. CILIATA, (*Fisch.*) Keralee, *Beng.* Leaves long petioled lanceolar: spathe shorter than the leaves with a tubular case and expanding ciliate apex: capsule six celled. A native of Bengal in marshy grounds on the banks of streams and tanks.—*Wight's Icon. fig.* 775; *Hort. Cal. p.* 685;—Ambrosinia ciliata, *Roxb. fl. Ind. III.* p. 491.

TYPHONIUM. (*Schott.*)

935. T. FLAGELLIFORME?

936. T. ORIXENSE, (*Schott.*) Ghet-kuchoo, *Beng.* Stemless: leaves three lobed: flowers sub-sessile: spathe ample, erect, longer than the spadix; filaments long and often ramous; flowers small.

Remarks.—A native of shady groves near Samulcottah where the soil is pretty rich and fertile, flowering time the beginning of the rains. The roots are exceedingly acrid and are applied as cataplasms to discuss scirrhous tumours.—*Hort. Cal. p.* 686;—Arum Orixense, *Roxb fl. Ind. III. p* 503; A. trilobatum, *Lour.* (not Linn.) *Wight's Icon. fig* 801.

AMORPHOPHALLUS, (*Blume.*)

937. A. CAMPANULATUS, (*Blume.*) Telinga Potato. Karoona, *Tam.* Muncha kunda, *Tel.* Ol, *Hind. Beng.*

Stemless: leaves decompound: flowers small, dark coloured, sessile with respect to the surface of the ground, and appearing when the plant is destitute of leaves: spathe of the spadix campanulate, with curled margins: no nectary: club broad-ovate, lobate: anthers 2-celled.

Remarks—The roots of this plant are very nutritious, on which account they are much cultivated for the purpose of diet. They are planted in May, and will yield from 100 to 250 maunds per beegah, selling at the rate of a Rupee a maund. The roots are also used for pickling. They are acrid when raw, and are employed medicinally in boils and ophthalmia. Wight says, that "when in flower the fetor it exhales is most overpowering, and so perfectly resembles carrion as to induce flies to cover the club of the spadix with their eggs." A very rich soil repeatedly ploughed, suits it best. The small tuberosities found in the large roots are employed as sets and planted in the manner of potatoes. In twelve months they are reckoned fit to be taken up for use; the larger roots will then weigh from 4-8 or more pounds, and keep well if preserved dry. The natives employ them for food in the manner of the common yam.—*Wight's Icon. fig.* 782; *Hort. Cal. p.* 686. Arum campanulatum, *Roxb. fl. Ind. III, p.* 509; *Gra. Cat. B. pl. p.* 228; Arum Rumphii; *Gaudich.*; Arum Zeylanicum, *Commel.*; Candarum Roxburghii, (*Schott.*)

COLOCASIA, (*Ray.*)

938. C. ANTIQUORUM, (*Schott*). Shema Kilangu, *Tam.* Chama, *Tel.* Kuchoo, *Beng.* Stemless: leaves peltate, ovate, repand, semibifid at the base: scape shorter than the petioles: spathe much longer than the spadix, cylindric, erect: club subcylindrical, length of the antheriferous part of the receptacle anthers many-celled.

Remarks.—There are several varieties of this plant. The leaves and petioles are eaten by the natives. Some varieties are seldom, if ever eaten. A native of wet marshy grounds: is very abundant in the Tanjore district on the banks of Irrigation Canals.—*Wight's Icon. fig.* 786; *Hort. Cal. p.* 686; Arum colocasia, *Linn.*; *Roxb. fl. Ind. III. p.* 494; *Gra. Cat. B. pl. p.* 229; Arum Ægypticum, *Rumph.*

939. C. NYMPHÆÆFOLIA, (*Roxb.*) Sarkuchoo, *Hind. Beng.* Stemless: leaves peltate, ovate, repand, semibifid at the base; scape shorter than the petioles, spathe much longer than the spadix, sub-cylindrical, erect: club slender, scarcely half the length of the antheriferous part of the receptacle: anthers many celled. This is common in Malabar, and, like the former, forms part of the food of the Natives.—*Wight's Icon. fig.* 786. *Hort. Cal.* 687; Arum nymphœifolium, *Roxb. fl. Ind. III, p.* 495; *Gra. Cat. B. pl. p.* 223.

940. C. ODORA, (*Schott.*) Sweet smelling Arum. Caulescent, leaves cordate, base bifid, lobes rounded: flowers in axillary pairs: spadix equalling the cymbiform spathe: club one-third of

the length of the whole spadix. Native of Pegu, flowers during the cool season, ripening its fruit in March and April. The flowers possess a considerable degree of agreeable fragrance, a very unusual quality, in the family.—*Wight's. Icon. fig.* 797; Arum odorum, *Roxb. fl. Ind. III, p.* 499; Caladium odoratum, *Spreng.*; *Hort. Cal. p.* 687.

CALADIUM, *Ventenat.* Meaning not explained.

941. C. BICOLOR, (*Willd.*) Two coloured Arum. Stemless: leaves peltate, cordate, sagittate, coloured in the disk: spadix shorter than the hooded spathe which is contracted in the middle. A pretty little plant. Native of Madeira.

ORDER CXXVI. ORONTIACEÆ OR ACORACEÆ.

R. BROWN; LINDL.

ORONTIUM OR SWEET FLAG TRIBE.

Description.—Herbs with broad, occasionally ensiform leaves, and spadiceous flowers inclosed by a spathe. They are usually associated with Araceæ, from which they differ in their hermaphrodite flowers, and in having frequently a perianth consisting of 4-8 scales. Lindley, on account of their hermaphrodite flowers places them near Juncaceæ.

Distribution.—Natives both of Tropical and cold regions. Known species 70.

Properties.—Acridity is met with in this order, which also contains nutritious, bitter, and aromatic plants.—*Balfour's Outlines of Botany, p.* 507; *Lindl. V. K. p.* 193.

ACORUS, (*Linn.*) Derived from *a*, privative, and *kore*, pupil of the eye, in reference to its medicinal properties.

942. A. CALAMUS, (*Linn.*) Sweetflag. Vassumboo, *Tam.* Vudza, *Tel.* Shwet-buch, *Beng.* Butch, *Hind.*

Remarks.—An aromatic bitter principle exists in the rhizomes of this plant, for which reason they are regarded as useful additions to tonic and purgative medicines, being much given to children in cases of dyspepsia, especially when attended with looseness of bowels. Beneficially employed also in chronic catarrh and asthmatic complaints. The leaves of the American species are said to be noxious to insects and are never eaten by cattle. They are used for tanning leather, and perfuming various substances. Pereira has remarked that the rhizomes might be easily substituted for more expensive spices or aromatics. The flavour is greatly improved by drying. In Constantinople, they are made into a confection, which is considered a good stomachic, and is eaten freely during the preva

lence of epidemic disease; they are supposed moreover to be an antidote for several poisons. The leaves contain an essential oil to which they owe their fragrance, and which in England is used by perfumers mixed with the farina of the rhizomes in the manufacture of hair powders. As a tonic in intermittent fevers, the rhizomes have been given when bark has failed. The rhizome is of a pale brown colour, with whitish scars on the lower side; in taste it is pungent, and slightly bitter. Rheede states that on the Malabar Coast, a bath made of the infusion of the root is considered an efficacious remedy for epilepsy in children.—*Useful Plants of India, &c. &c.*

POTHOS, (*Linn.*) *Pothos*, the name of a species in Ceylon.

943. P. PERTUSA, (*Roxb.*) Scandent, subparastic, rooting on trees: leaves cordate, perforated on one side and pinnatifid on the other: anthers two lobed. Native of the mountainous parts of Coromandel.—*Roxb. fl. Ind. I, p.* 455; Scindapsus pertusus, *Schott; Wight's Icon. fig.* 781.

DRACONTIUM, (*Linn.*) From *drakon*, a dragon; the stems are spotted like the skin of a snake.

944. D. POLYPHYLLUM, (*Linn.*) Many-leaved Dragon. Caatkarnay, *Tam.* Adivie kanda, *Tel.*

Remarks.—The prepared root is supposed by the natives to possess antispasmodic virtues, and is considered a valuable remedy in asthma. It is also used in hemorrhoids. (*Ainslie.*)—*Hort. Cal. p.* 989; *Gra. Cat. B. pl. p.* 229.

ORDER CXXVII. PISTIACEÆ OR LEMNACEÆ. RICH.; DC.

DUCK-WEED TRIBE.

Description.—Floating plants with lenticular or lobed leaves or fronds, bearing 1 or 2 monœcious flowers inclosed in a spathe, but with no perianth. Stamens definite, often monadelphous. Ovary 1-celled; ovules 1 or more, erect or horizontal. Fruit indehiscent or membranous, or bursting transversely, or baccate; 1 or more seeded. Seeds with a thick ribbed episperm and an indurated micropyle; embryo in the axis of fleshy albumen, with a lateral cleft, or at the apex of the nucleus.

Distribution.—Native both of cool and of warm regions. Known species 20.

Properties.—Unimportant.—*Balfour's Outlines of Botany, p.* 508; *Lindl. V. K. p.* 124.

LEMNA, (*Linn.*) From *lepis*, a scale; in reference to the form of the plants.

945. L. GLOBOSA, (*Roxb.*) Duck-weed. Elp Pasi, *Tam.* This minute plant covers the surface of tanks like a green scum.—*Gra. Cat. B. pl. p.* 252.

PISTIA, (*Linn.*) From *pistos*, aquatic ; the plants float on the surface of the water.

946. P. STRATIOTES, (*Linn.*) Water soldier. Agasatamaray, *Tam.* Antarci-tâmâra, *Tel.* Tokapana, *Beng.* and *Hind.*

Remarks.—This plant is common in tanks and ditches in this country. The plant is cooling and demulcent and is given in dysuria. The leaves are made into poultices and applied to hœmorrhoids. In Jamaica, according to Browne, it impregnates the water in hot dry weather with its particles to such a degree as to give rise to the bloody flux. The leaves mixed with rice and cocoanut milk are given in dysentery, and with rose-water and sugar in coughs and asthma. The root is laxative and emollient. —*Roxb. fl. Ind. III, p.* 131 ; *Gra. Cat. B. pl. p.* 200 ; *Hort. Cal. p.* 684. *Useful Plants of India ;* Tala Indica. *Lour.*

ORDER CXXVIII. GRAMINACEÆ. LINDL.

GRASS TRIBE.

Description.—Herbaceous plants, with round, usually hollow, jointed stems ; narrow, alternate leaves, having a split sheath and often a ligule at its summit ; hermaphrodite or monœcious, or polygamous flowers either solitary or arranged in spikes or panicled locustæ. The flowers are considered as composed of a series of bracts ; the outer, called glumes, alternate, often unequal, usually 2, sometimes 1, rarely wanting ; the next, called pales or glumelles (paleæ or glumellæ), usually 2, alternate, the lower or outer one being simple, the upper or inner having 2 dorsal or lateral ribs, aud supposed to be formed by 2 paleœ united ; sometimes 1 or both are wanting. The glumes inclose either one flower, as in Fox-tail grass, or more flowers, as in Wheat, and among the flowers there are frequently abortive florets. Stamens hypogynous, 1-6, usually 3 ; anthers versatile. Ovary superior, 1-celled, with 2 (rarely 1 or wanting), hypogynous scales called lodicules ; ovule 1 ; styles 2 or 3 (rarely united) stigmaa often feathery. Fruit a caryopsis. Embryo lenticular external lying on one side, at the base of farinaceous albumen. Germination endorrhizal.

Distribution.—Grasses are widely distributed, and are found in al quarters of the globe. Schouw conjectures that they constitute 1-22d o all known plants. Known species, about 3,800. They are usually socia plants, forming herbage in temperate regions, and sometimes becomin arborescent (50 or 90 feet high) in tropical countries.

Properties.—This is perhaps the most important order in the Vegetable kingdom, as supplying food for man and beast, to it belongs the cu tivated grains, Wheat, Oats, Barley, Rice Rice, Maize, and Millet, most c which have been so long under cultivation that their native state is un known. The properties of the order are nutritive in a marked degre Some yield fragrant oils, others produce sugar.—*Balfour's Outlines of B tany, p.* 510 ; *Lindl. V. K. p.* 106.

ORYZA, (*Linn.*) Derived from the Arabic name *eruz.*

947. O. SATIVA, (*Linn.*) Common Rice-plant. Nelloo, Arese *Tam.* Oori, cheni, *Tel.* Dhan, *Beng.* Pasuel, *Hind.*

Annual : culms numerous, jointed, round and smooth : leaves sheathing, long, scabrous outside : panicles terminal : rachis common and partial, angular, hispid : flowers simple, pedicelled, calyx glume 2 valved, 2 flowered : the larger valve ending in a long, hispid, coloured awn : corolla 1-valved, growing to the seed. —*Roxb. fl. Ind. II, p.* 200. Cultivated every where.

ZEA, (*Linn.*) From *zao,* to live ; *in* reference to the nutritive properties of the plants.

948. Z. MAYS, (*Linn.*) Common Maize, Indian corn. Mukka cholum, *Tam.* Muka juna, *Tel.* Bhotta ; Bhuta, *Hind.* Mokka, *Beng.* Native of Tropical America. Cultivated all over India.—*Roxb. fl. Ind. III, p.* 568 ; *Gra. Cat. B. pl. p.* 240 ; *Hort. Cal. p.* 709.

PANICUM, (*Linn.*) From *panicula,* a panicle, or *panis* bread.

949. P. MILIACEUM, (*Willd.*) Little Millet. Varagoo, *Tam.* Warga, *Tel.* Cheena, *Hind.* Cheeno-ghas, *Beng.* Cultivated in India.—*Roxb. fl. Ind.* I, *p.* 310 ; *Gra. Cat. B. pl, p.* 237 ; *Hort. Cal. p.* 700 ; *M. E. Juries' Report,* 1857.

950. P. MILIARE, (*Linn.*) Shama, *Tam.* Nella shama, *Tel.* Cultivated in India.—*Roxb. fl. Ind. I, p.* 309 ; *Gra. Cat. B. pl. p.* 237 ; *Hort. Cal. p.* 700 ; *M. E. Juries' Report,* 1857.

951. P. JUMENTOSUM, (*Pers.*) Guinea-grass. Native of Guinea. Cultivated in Tropical America, and India, under the name of Guinea-grass. *Hort. Cal. p.* 700.

952. P. ITALICUM, (*Linn.*) Italian Millet. Tenney, *Tam.* Cora, *Tel.* Kora, *Hind.* Kangoo Kungnee, *Beng.*

Remarks.—This is considered by the natives one of the most delicious of cultivated grains. The Brahmins, indeed all classes of natives, particularly esteem it and use the seeds for cakes and porridge, &c. It is good for pastry, scarcely inferior, says Ainslie to wheat, and, when boiled with milk makes a pleasant light diet for invalids. It is cultivated in many parts of India. It requires a light dry soil.—*Roxb. fl. Ind.* I, *p.* 302; *Gra. Cat. B. pl. p.* 237 ; *Hort. Cal. p.* 237.

953. P. FRUMENTACEUM, (*Roxb.*) Bonta-shama, *Tel.* Shama, *Beng.* Cultivated in India. *Roxb. fl. Ind. I, p.* 304; *Gra. Cat. B. pl. p.* 137; Oplismenus frumentaceus, *Hort. Cal. p.* 703.

PENICELLARIA, (*Swz.*) From *penicillus,* a pencil; in allusion to the spikes.

954. P. SPICATA, (*Swz.*) Spiked Millet. Kumboo, *Tam.* Bajree, *Tel.* Bajra, *Hind.* and *Beng.* Cultivated in India, especially over the higher lands on the coast of Coromandel. Cattle are fond of the straw, and the grain is a very essential article of food amongst the natives. (*Roxb.*) *Hort. Cal. p,* 703; Holcus spicatus, *Linn.*; *Gra. Cat. B. pl. p.* 238; Alopecurus typhoides, *Gmel.*—Pennisetum typhoideum, *Pers.*—Panicum spicatum, *Delile.*—*Roxb. fl. Ind. I, p.* 283.

SPINIFEX, (*Linn.*) From *spina,* a thorn, and *fero,* to bear; in allusion to the leaves having spinous points.

955. S. SQARROSUS, (*Sprengel.*) This plant is common on the sea beach, and is of great utility for keeping the sand from drifting.

CYNODON, (*Rich.*) Derived from *kuon,* a dog, and *odous,* a tooth.

956. C. DACTYLON, (*Pers.*) Hurriallee grass. Arugampilloo, *Tam.* Gericha, *Tel.* Doorba, *Beng.*

Remarks.—This is one of the commonest grasses, growing every where in great abundance. It forms the greater part of the food of cattle in this country. It is the prettiest and most lasting grass for planting lawns, &c. Its usefulness added to its beauty induced the Hindoos to celebrate it in their writings.

ELEUSINE, (*Gærtn.*) Derived from *Eleusis,* one of the appellations of Ceres.

957. E. CORACANA, (*Gærtn.*) Ragee. Kayvaru, *Tam.* Ponassa or Sodee, *Tel.* Natchanee, *Hind.* Murooa, *Beng.* Cultivated in India.—*Roxb. fl. Ind.* I, *p.* 342; *Gra. Cat. B. pl. p.* 235; *Hort. Cal. p.* 712;—Cynosurus coracanus, *Linn.*

958. E. STRICTA, (*Roxb.*) Pedda Sooloo, Pedda sodi, *Tel.* Ragee, *Hind.* Cultivated in India.—*Roxb. fl. Ind.* I, *p.* 343; *Hort. Cal. p.* 712.

POA, (*Linn.*) From *poa*, signifying grass or herbage.

959. P. ANNUA, (*Linn.*) Annual meadow grass.

FESTUCA, Linnæus derived this name from the celtic word *fest*, signifying pasture or food.

960. F. INDICA, (*Retz.*) Indian Fescue Grass.

BAMBUSA, (*Schreb.*) From *bamboo*, its name in Southern India.

961. B. ARUNDINACEA, (*Willd.*) Common Bamboo. Moonghil, *Tam.* Veduru, *Tel.* Bânsh, *Beng.* B'hance, *Hind.*

This aborescent grass is applied to a great variety of economical purposes, and is so well known that it will be needless to enumerate them here. In Mysore and S. Concan the seeds are gathered for food by the poorer classes. (*Buch.*)—*Roxb. fl. Ind.* II, *p.* 191; *Gra. Cat. B. pl. p.* 239; *Hort. Cal. p.* 719;—Bambos arundinacea, *Retz.*; Arundo bambos, *Linn.*; Nastus arundinaceus, *Linn.*

962. B. NANA, (*Roxb.*) Small Bamboo. Native of China. *Hort. Cal. p.* 719.

963. B. GIGANTEA, (*Wall.*) Gigantic Bamboo. Native of Burmah. *Hort. Cal. p.* 719.

SACCHARUM, (*Linn.*) From *sakkar*, its Arabic name.

964. S. SPONTANEUM, (*Linn.*) Thatch grass. Nanel, *Tam.* Relloogaddy, *Tel.* Kagara, *Hind.* Kash, *Beng.*

Remarks.—The leaves of this species make good mats for various purposes, and are also used for thatching houses. Buffaloes are fed on the grass. It grows on the banks of rivers, in hedges, and on moist uncultivated lands. The immense quantity of very bright silver colored wool which surrounds the base of the flowers gives this species a most conspicuous and gaudy appearance.—*Roxb. fl. Ind.* II, *p.* 235; *Hort. Cal. p.* 705;—Imperata spontanea, *Linn.*

965. S. OFFICINARUM, (*Linn.*) Common Sugar-cane. Karomboo, *Tam.* Cherukoo bodi, *Tel.* Uch, *Hind.* Ook, *Beng.* Native of E. and W. Indies, Society Islands, &c. Several varieties are cultivated.—*Roxb. fl. Ind.* II, *p.* 237 ; *Gra. Cat. B. pl. p.* 239 ; *Hort. Cal. p.* 705, *&c.*

SORGHUM, (*Pers.*) From *sorghi*, its Indian name.

966. S. VULGARE, (*Pers.*) Great Millet. Cholum, *Tam.* Jonua, *Tel.* Jowari, *Beng.*

Remarks.—This species is cultivated for its grain which is much used as food. Cattle are very fond of the straw ; the latter is also a substitute for forage for horses, when gram is not obtainable. *Hort. Cal. p.* 704 ; —Holcus sorghum, *Linn.*;—*Gra. Cat. B. pl. p.* 238, excl. syn. Rumph ;— H. Durra, *Forsk.*—Andropogon sorghum, *Brot*; *Roxb. fl. Ind.* I, *p.* 269.

967. S. SACCHARATUM, (*Pers.*) Sweet Sorghum.

Remarks.—This plant, known as the "Sorgho susre" or "Chinese Sugar-cane" has lately been cultivated in the United States of America, France, England and other countries, is a sugar producing and forage plant. The results of its introduction have been very satisfactory, and the plant is of great value to the cultivator, in these and other countries, where it is extensively grown.

"Juice is found in abundance in the pith of the stalks, and sugar and alcohol are made from it, as from that of the true sugar-cane. The leaves also furnish an excellent forage, and a kind of Cider is made from the imperfectly ripened shoots. The importance of this plant if only a part of the alleged qualities prove correct can hardly be overrated, not only as regards the sugar, which is about a third more than is produced by an equal quantity of Beetroot, but with regard to the alcohol, which is in the proportion of 63 to 3 equal weights of the Sorghum, and the Beetroot."

The plant under consideration is quite distinct from any of the "Imphee's," it is a more robust plant, varying in height from 10 to 18 feet, depending on the soil and situation in which it is grown.

ANDROPOGON, (*Linn.*) The little tufts of hairs on the flowers resemble a man's beard ; hence the name from *aner*, a man, and *pogon*, a beard.

968. A. MURICATUS, (*Retz.*) Cuscus grass. Vette-vayr, *Tam.* Cooroo-vayroo, or Kussavoo, *Tel.* Bena, Useer, *Hind.* Kror, Khus-khus, *Beng.*

Remarks.—An infusion of the roots is used medicinally as a gentle stimulant, and a grateful drink in feverish cases. The roots are also made into fans, and being thinly worked into bamboo frames are employed for

the purpose of cooling the heated atmosphere in dwelling-houses during the hot winds. These are known as the *cuscus tatties*. The grass is used for thatching bungalows and for covering palanquins. The roots reduced to powder are given in bilious affections, and, mixed with milk and applied externally, as cooling applications to the skin when irritated. They are delightfully fragrant and aromatic, and contain a volatile oil, which is imported into England for perfumery. An ointment prepared with the oil has been employed in removing pediculi from the hair. A weak infusion is frequently given in cases of gout and rheumatism, it is stimulating and diaphoretic. (*Useful Plants of India.*) *Roxb. fl. Ind, I. p.* 265 ; *Gra. Cat. B. pl. p.* 238 ; *Hort. Cal. p.* 706 ;—Anatherum muricatum, *Beauv.* ; Phalaris Zizania, *Linn.*

969. A. CITRATUM, (*D. C.*) Lemon-grass or Sweet-rush Camachie-pilloo, Wassina-pilloo, Cavatum-pilloo, *Tam.* Kamachie-kussoo, *Tel.* Ghunda-bela, *Hind.* Gundha-bena, *Beng.*

Remarks.—An infusion of the fragrant leaves, which are bitter and aromatic, is given to children as an excellent stomachic. It is also diaphoretic. An essential oil is prepared from them, which is a most valuable remedy in rheumatism, applied externally. Mixed with butter-milk, the leaves are used in cases of ringworm, when fresh and young they are used in many parts of India as a substitute for tea ; and the white centre of the succulent leaf-culms is used to impart a flavour to curries. The oil is of a light straw colour, but becomes red if kept long. It is much used in perfumery, as the oil of Verbena. (*Useful Plants of India*) Andropogon Schœnanthus, *Linn.* ; *Roxb. fl. Ind.* I. *p.* 274 ; *Gra. Cat. B. pl. p.* 238 ; *Hort. Cal. p.* 706 ; Cymbopogon Schœnanthus, *Schult.*

II.—CRYPTOGAMEÆ, ACOTYLEDONEÆ, OR FLOWERLESS PLANTS. CLASS III.—ACOTYLEDONES OR ACRO-THALLOGENÆ.

ORDER CXXIX. FILICES. JUSS.

(38)

THE FERN TRIBE.

Description.—Leafy plants, the leaves, or more properly fronds, being circinate in vernation, and arising from a rhizome, or from a hollow aborescent trunk, having the acrogenous structure. The fronds bear on the veins of their lower surface, or along their margins, sporangia, which open in various ways in order to discharge minute spores. The supposed organs of reproduction, called antheridia and archegonia are seen on the young frond, when first developed from the spore in the form of a prô thallus. For an account of the Sub-orders, see Beddome, Balfour and Bentley.

Distribution.—They prevail chiefly where there is a certain degree of mositure; hence they are abundant in insular situations, in the forests of tropical countries, as well as on the mountains of Northern latitudes. In the East Indies they have been found in the greatest abundance in the Malayan Peninsula, the Khassya Mountains, the Mishmee Hills, Bootan, Nepal, the Himalayas, Mergui, and the west coast of the Peninsula of India. (*Voigt.*) Ferns form the characteristic Flora of New Zealand. Species between 2,000 and 3,000.

Properties.—Some Ferns are used medicinally as anthelmintics, while others are demulcent and astringent. The rhizomes of several species, such as Diplazium esculentum, Pteris esculenta, Marattia alata, Nephrodium esculentum, are used as food in Australia, the Sandwich Islands, and India. Some species are fragrant, as Aspidium fragrans. Polypodium phymatodes, and Angiopteris erecta.—*Balfour's Outlines of Botany, p.* 512, *Lindl. V. K.*

HEMIONITIS, (*Linn.*) From *hemionos*, a mule; the species is supposed to be barren.

970. H. CORDATA, (*Roxb.*) Heart-leaved Hemionitis. Pulicat Hills.

POLYPODIUM, (*Linn.*) From *poly*, many, and *pous*, a foot; numerous root-like feet.

971. P. QUERCIFOLIUM, (*Linn.*) Oak-leaved Polypodium. Pulicat Hills, and other parts of India.

Nephobolus, (*Kaulf.*) From *niphobolus*, covered with
ıow ; the duinsia, appear as if covered with snow.

972. N.——————sp. From the Galaparvatrum Hills.

Adiantum, (*Linn.*) Derived from *adiantos*, dry. Pliny
ys, it is in vain to plunge the *adiantum* in water, for it always
mains dry.

973. A. caudatum, (*Linn.*) Indian Maiden Hair-fern. A
etty fern, found in various parts of India. " The usual length
the frond is from twelve to eighteen inches ; in form it is
ongated, attenuated, hairy, not unfrequently rooting at the apex."

Asplenium, (*Linn.*) From *a*, privative, and *splen*, spleen ;
supposed medicinal qualities.

974. A. radiatum, (*Swz.*) A small fern, " resembling
miniature Palmyra tree." Found in various parts of India.

Lygodium, (*Swartz.*) From *lygodes*, flexible ; in allusion
the twining habit of the plant.

975. L. microphyllum, (*R. Br.*) Fringed Snake's-
ngue Fern. A beautiful climbing fern, growing in abundance
moist places at the foot of the Pulicat Hills.

Order. CXXX. MARSILEACEÆ, or RHIZOCARPEÆ.

R. Brown ; Lindl.

The Pepperwort or Rhizocarp Tribe.

Description.—Aquatic plants, with creeping stems bearing leaves,
ıich are usually divided into 3 or more cuneate portions, and have a
rcinate vernation. The fructification is produced at the base of the
afstalks, and consists of sporocarps or involucres inclosing clustered
gans, which consists of antheridian and pistillidian cells. The ger-
inating body has an oval form, and occasionly a mammilla on one side,
ıence root and leaves proceeds.

Distribution.—Found in ditches in various parts of the world chiefly
temperate regions. Known species 24.

Properties.—Use unknown.—*Balfour's Outlines of Botany, p.* 514 ;
ndl. V. K. p. 71.

Marsilea, Linnæus dedicated this genus to the Count L.
. Marsigli, founder of the Academy of Sciences, Bologna.

976. M. QUADRIFOLIA, (*Linn.*) Four-leaved Marsilea. Neer-aurei, also Aurei-keerei, *Tam.* Soosnishak, *Beng.*

A small creeping plant, having the appearance of *Oxalis corniculata.* Common on the margins of tanks and in ditches.—*Gra. Cat. B. pl. p.* 243 ; *Hort. Cal. p.* 738.

ORDER. CXXXI. LYCOPODIACEÆ, DC.

THE CLUB MOSS TRIBE.

Description.—Plants with creeping stems or corms, which produce leafy branches, somewhat resembling mosses. The leaves are small, sessile, and imbricated or verticillate. The fructification occurs in the axil of the leaves, and often in a spike-like form, and consists of kidney-shaped, 2-valved cases, which contain antheridian or spermatozoidal cells, and roundish or four sided bodies, called oophoridia, opening by 2-valves, and containing four large spores. In the interior of the latter a pro-embryo is developed, in which archegonia are produced, and thereafter impregnation gives rise to the germinating body.

Distribution.—They are most abundant in damp hot situations in the Tropics, but are also natives of even the North of Europe, where whole tracts are found covered with Lycopodium alpinum and selaginoides. *L.* Known species 200.

Properties.—Some of the plants are emetic and purgative. The powdery matter contained in their fructification is inflammable, and is known as Lycopode powder or Vegetable brimstone.—*Balfour's Outlines of Botany, p.* 514; *Lindl. V. K. p.* 69.

LYCOPODIUM, (*Linn.*) From *lykos,* a wolf, and *pous,* a foot; because of the resemblance of the roots.

977. L. CERNUUM, (*Linn.*) Common Club-moss. Pulicat Hills, growing in moist situations. It is a pretty plant "resembling a miniature *Araucaria excelsa.*" *Gra. Cat. B. pl. p.* 243; *Hort. Cal. p.* 738.

978. L. PHLEGMARIA, (*Linn.*) Indian Club-moss.—*Gra. Cat. B. pl. p.* 243; *Hort. Cal. p.* 738.

SUPPLEMENT.

NYMPHÆACEÆ.

WATER-LILIES.

For description of the order, see *Hand-Book, page* 5.

VICTORIA, (*Lindl.*)

V. REGIA, (*Lindl.*) Discovered by R. H, Schomburgh in 1837, on the banks of the Berbice.

A gigantic aquatic plant. Leaf from three to six feet in diameter, resembling a salver, or large round tea-tray, resting upon the water. The upper surface of the leaf is of a bright green colour, while its lower is of a vivid crimson, and presents a complicated network of fibres, from which project a very formidable array of thorns. Calyx of 4 sepals. Flower as much sometimes as a foot in diameter, with several hundreds of petals, passing in alternate tints from pure white to rose and pink. It passes through three distinct stages in the process of expanding, with the interval of a day between each stage, and is almost equally beautiful during each of these stages. When perfectly expanded it almost immediately dies off. When it first opens, it is white, with pink in the middle, which spreads over the whole flower the more it advances in age, and is generally found the next day of a pink color. As if to enhance its beauty, it is sweet scented. Like others of its order, it posesses a fleshy disk, and petals and stamens pass gradually into each other, and many petaloid leaves may be observed which have vestiges of an anther. Peduncle an inch thick near the calyx, studded

with sharp prickles about ¾ of an inch in length.—*See Firminger's Manual of Gardening, p.* 367.

Attempts were made some time ago at introducing this extraordinary plant into Madras, but without success. It is now, however, thriving in the Guindy Park. Lady Denison, while here, planted the Victoria Regia in two separate sheets of water in the People's Park, but they did not thrive long, and ultimately withered; owing, it is believed, to the water in the Park being strongly impregnated with salt.

It was introduced several years ago into Calcutta, where it grows freely in the tanks, flowering principally in the cold season, and bearing seed abundantly. The Reverend A. C. Firminger, in the work above mentioned, in speaking of the plant growing about Calcutta, remarks :—"The plant is found not to exist more than two years, when its place must be supplied by a fresh one raised from seed." The seeds are sometimes very long in germinating : in one instance, mentioned by the above authority, requiring 2 years and 9 months before germination took place.

If the seeds have to be conveyed to a long distance, it has been found that they will only retain their vitality by being kept in phials of pure water.—*See Firminger, Manual of Gardening.*

NELUMBIACEÆ.

Water Beans.

Aquatic herbs resembling Water-lilies, but differing in their large exalbuminous embryo, and their remarkably enlarged tabular torus, in the hollow of which the nuts are half buried, and finally become loose. Found in quiet waters of temperate and tropical regions in the southern hemisphere; very frequent in the East Indies.—*Balf. Class Book of Botany.* Chiefly remarkable for the beauty of the flowers. The fruit of Nelumbium speciosum is believed to have been the Egyptian Bean of Pythagoras, and the flower that Mythic Lotus, which so often occurs on the monu-

ments of Egypt and India. The nuts of all the species are eatable and wholesome.—*Lindl. V. K.*

The leaf and flower stalks of this plant (N. speciosum) abound in spiral tubes more loosely combined, and perhaps stronger, than the same vessels in most other vascular plants. These in the southern provinces are extracted with great care by gently breaking the stems, and slowly drawing apart the ends. Long pieces of the spiral filament, composing the tube, are thus uncoiled. With these filaments "are prepared those wicks which on great and solemn religious occasions are burnt in the lamps of the Hindoos placed before the shrines of their gods."—*Ainslie.* Similar wicks are prepared from the spiral tubes of some of the Nymphœas but are not thought so sacred.

In sowing the seed of this plant it is customary to enclose them in a ball of clay before throwing them into the water.—*Wight's Illustr.*

NELUMBIUM, (*Juss.*) From *nelumbo,* the Cingalese name of the *N. speciosum.*

N. SPECIOSUM, (*Willd.*) This beautiful aquatic, which is too well known to need any description, is considered to be the true Lotus of the Egyptians; and is one of the Hindoo emblems of female beauty. The leaves are used by the Hindoos as plates. The seeds it is said will vegetate freely, and flower the first year, after being kept forty years. All the species are more or less fragrant. It flowers nearly the whole year. Flowers white or rose-colored:—*Nymphœa Nelumbo, Linn.*—*Nelumbo nucifera, Gærtn.* —*Tamara rubra, Roxb. in E. I. C. Mus.*—*Roxb. fl. Ind. II,* 647. *W. & A. Prod. I,* 16.—*Gra. Cat. B. pl. p.* 5; *Voigt, Hort. Cal. p.* 9.—*Wight, Ill. I. t.* 9. *Cleghorn, Hort. Madr.* (1853.)

CAPPARIDACEÆ

CAPPARIDS.

CLEOME. (*Linn.*) *See page* 7.

C. ASPERA, (*Koen.*)

Herbaceous, rough with minute scattered prickles on both the stem and leaves: leaves trifoliate; leaflets oblong, many times longer than the petiole: stamens 6: siliqua terete, torulose, glabrous, attenuated at the base but quite sessile, acuminated with the subulate style: torus inconspicuous.—*Wight, Prod. p.* 22.—*Wight, Icon. fig.* 287.

Not very common: but is easily recognized by the student.

DROSERACEÆ.

SUN-DEWS.

Herbaceous, marsh-plants, often covered with glandular hairs; leaves alternate, fringed at their base; vernation circinate. Sepals five, persistent. Petals 5, imbricate. Stamens as many as petals, or two or three times as many, distinct, withering. Styles 3-5, sometimes united. Fruit a one-celled, 3-5 valved capsule, with loculicidal dehiscence. Seeds numerous; embryo small, in the base of fleshy albumen. 90 known species. *Balfour's Class Book.* These plants are found chiefly on marshy ground, nearly all over the world. To this natural order belongs that singular plant the Venus's Fly-trap, (*Dionœa muscipula.*)

DROSERA, (*Linn.*) From *droseros,* dew, from the dew-like secretion.

D. BURMANNI, (*Vahl.*)

Found growing on the banks of the Adyar in Madras by Dr. Wight. The flowers are very small and yellow.—*Roxb. fl. Ind. II.* 113; *Wight, Ill. I. p.* 42, *t.* 20: *W. & A. pr. I. p.* 34: *Voigt, Hort. Cal. p.* 79.

Besides this plant, another is to be found in the Peninsula, viz., D. Indica.

ELATINACEÆ.

WATER-PEPPERS.

Little annuals, growing in marshy ground. Stems hollow, creeping. Leaves opposite, with interpetiolar, membranaceous

stipules. Flowers minute, axillary. Sepals and petals 3-5, imbricated, the latter hypogynous and alternate with the sepals. Stamens generally double the number, or sometimes only as numerous as the petals, distinct. Ovary superior, 3-5 celled; styles 3-5; stigmas capitate. Fruit capsular, 3-5 celled. Seeds numerous, exalbuminous, known species 22. Found scattered all over the world.

Their properties are reported to be acrid. "Dr. Wight says that in India the little Bergia Ammannioides bears the Tamool name of Neer-mel-neripoo, or Water-fire, which seems a curious coincidence with the word Water-pepper, given in English to Elatine, and seems to indicate a popular belief in these plants possessing some acridity." *Lindl. V. K.*

ELATINE. (*Linn.*) From *elate*, a fir-tree, to which the leaves of the species have been compared.

E. VERTICILLATA, (*W. & A.*)

Annual: stems branched, rooting from the lower joints; leaves lanceolate, attenuated below into a longish petiole and serrated, particularly towards the point: flowers densely capitate, sessile, axillary: sepals and petals 5: stamens 10: styles short: flowers very small, white. Banks of rivers and rice fields all over India, flowering in the rainy season.—*Drury, Hand-Book, I. p.* 59; *W. & A. prod. I. p.* 41; *Roxb. Cor. pl. II. fig.* 142; *Rheede, Mal. IX. t.* 78.—*Bergia verticillata, Willd*; *Roxb. fl. Ind. II. p.* 456.—*Bergia aquatica, Roxb. Cor.*

E. AMMANNIOIDES, (*W. & A.*) Neer-mel-neripoo, *Tam.* Annual stems branched, erect, or with the lower branches procumbent, usually rough with hairs, but sometimes glabrous: leaves oblong lanceolate, acute, sharply serrated: flowers pedicellate, aggregate in the axils of the leaves: sepals, petals and stamens equal in number: flowers very small, rose-colored. Banks of rivers and rice fields all over India, flowering in the rainy season.—*Drury, Hand-Book I. p.* 60; *W. & A. prod. I.*

p. 41—*Bergia Ammannioides, Roxb. fl. Ind. II. p.* 457 ; *Wight, Ill. I. fig.* 25.

In Madras, the student will find these plants on the banks of old tanks, ditches, &c.

CARYOPHYLLACEÆ.

SILENADS OR CLOVEWORTS.

A description of this natural order has already been given.—*See page* 13.

MOLLUGO.

M. NUDICAULIS, (*Linn.*) A small plant, growing chiefly on gravelly or dry soil, with oblong or obovate, radical leaves, scapes trichotomously panicled, leafless.—*Wight, prod. p.* 43 ; *Drury, Hand-Book, p.* 63.

M. CERVIANA, (*Ser.*) Indian Fairy-flax. Purpadagum, *Tam.* Purpatagum, *Tel.* This little plant, which is found growing on the same description of soil as the last, has numerous smooth, round, straightish, delicate stems, looking like threads of coral, from their color : leaves linear, peduncles long with 3 umbellate flowers. Pharnaceum cerviana, (*Linn.*) *Drury, U. P.* 444 ; *W. & A. prod. I,* 44 ; *Drury, Hand-Book, p.* 64.

MALVACEÆ.

MALLOW-WORTS.

For description of the order, *see Hand-Book, p.* 14.

PAVONIA, (*Cav.*)

P. ODORATA, (*Willd.*) Fragrant Pavonia. Peiramootlie, *Tam.* A small, rather rare plant, hairy and viscid all over : leaves cordate, roundish-ovate, upper ones 3-lobed, dentated : flowers rose-colored and sweet-smelling.—*Roxb. fl. Ind. III, p.* 214 ; *W. & A. prod. I, p.* 47 ; *Drury's Useful Plants,* 486 ; *Ainslie's Mat. Med. II,* 297 ; *Cleghorn, Hort. Madr.*

ABELMOSCHUS.

A. MOSCHATUS, (*Moench.*) Musk-mallow. Caat-kusthooree, Vettilei-kusthooree, *Tam.* Kalee-kusthooree, *Duk.* Mooshk-dhana, *Hind.*

This plant resembles the A. esculentus or Bandikai very much, except chiefly that its leaves are 5-7 lobed instead of 3-5 obed: petals sulphur-colored, deep purple at the base. *H. Abelmoschus,* (*Linn.*) *H. longifolius,* (*Willd.*).—*W. & A. prod. I.* 53; *Rheede, II, t.* 38; *Wight, Icon. t.* 399; *Drury, Useful Plants* 2; *Voigt, Hort. Cal. p.* 119; *Drury, Hand-Book, p.* 76.

The seeds have a very strong odour of musk, particularly when rubbed between the fingers, and are used by the Arabs in making their coffee, in order to perfume it; they also consider them cordial and stomachic. It is said also that they are used in perfumery. Various medicinal properties are attributed to them, one of which is, that they are a good antidote to the bites of snakes and other venomous creatures, but which is very doubtful. This is a plant not generally known: is to be found chiefly in the gardens of the Mahometans. It has flowered and yielded fruit in the garden of the Medical College.

ABUTILON, (*Gærtn.*)

A. INDICUM, (*G. Don.*) Country Mallow. Thoothee or Nalla-thoothee, *Tam.* Nugoo-benda, *Tel.* Coongoonie, *Hind.* Kung-kuikapat, *Duk.*

A very common plant every where; has found its way into the People's Park long ago. Flowers light orange-colored with long foot-stalks; capsules made up of a great many carpels, dehiscence septicidal. These capsules are collected by the people of the country, for stamping their cakes and sweetmeats with, during Christmas and the New Year. The leaves of the plant are considered demulcent and emollient: one of the best substitutes we have for the English mallow.—*Drury, Hand-Book, p.* 80; *Drury,*

SIDA, (*L.*)

S. ACUTA, (*Burm.*) Malei-theingoy also Arrooa-manopoondoo, *Tam.* Vishaboddee, *Tel.* A shrubby little plant: leaves narrow lanceolate, acuminate, coarsely serrate: stipules linear, acuminated, ciliated, often longer than the petiole: pedicels axillary, solitary, jointed about the middle: carpels 5-9, birostrate: flowers smallish, yellow.—*Roxb. fl. Ind. III. p.* 171; *W. & A. pr. I. p.* 57; *Wight's Icon. I, t.* 95; *Grah. Cat. B. pl. p.* 16; S. lanceolata, (*Retz.*) *Roxb. fl. Ind. III, p.* 175; *Rheede.* X, *t.* 53; *Rumph.* VI. *t.* 18; *Voigt's Hort. Cal. p.* 113.—Root intensely bitter & stomachic. (*Ainslie.*)

S. CORDIFOLIA, (*L.*) Shrubby: perennial: leaves cordate, bluntly serrated, velvety or tomentose: carpels 9-10, with two hairy beaks.—*Drury, Hand-Book, I, p.* 83; *Roxb. fl. Ind. III, p.* 177; *W. & A. pr.* I, *p.* 58; *Grah. Cat. B. pl. p.* 16; *Rheede, X. t.* 54: flowers middle-sized, yellow, *Voigt. Hort. Cal. p.* 113.

S. RETUSA, (*L.*) Shrubby, small; leaves obovate, retuse-toothed towards the apex: tomentose beneath, stipules longer than petiole: pedicels axillary, 1-flowered, jointed about the middle: carpels 7-10, birostrate: flowers small, yellow.—*Drury, U. P. p.* 406; *Drury, Hand-Book, p.* 82; *Roxb. fl. Ind. III, p.* 175, *Rheede, X. t.* 18; *Rumph. Amb. VI. t.* 19.

CEDRELACEÆ.

CEDRELADS.

SOYMIDA.

S. FEBRIFUGA, (*Juss.*) Red wood tree. Shem-marum also Wond-marum, *Tam.* Soimida, *Tel.* Rohun, *Hind.*

This tree was to be found in the A. H. Society's Gardens about ten years ago, (and is probably there now,) as it is mentioned in Dr. Cleghorn's *Hort. Madr.*

The bark has been used in medicine as a substitute for the celebrated Cinchona, which is now being cultivated at the Neilgherries so successfully by Mr. McIvor.

The wood of this tree is very much used by the natives, particularly for making ornamental supports or pillars, for which it appears well suited, as it is of a fine dark-red color, very hard and durable.—*W. & A. prod. I.* 122; *Drury, U. P.* 590; *Voigt. Hort. Cal. p.* 137; Swietenia febrifuga, *Roxb. Corom.* 1, *t.* 17; *fl. Ind. II. p.* 398; *Gra. Cat. B. pl. p.* 32; *Drury, Hand-Book, Vol. I, p.* 170.

OXALIDACEÆ.

Oxalids.

For a description of this order, *see Hand-Book, p.* 37.

Oxalis, (*L*).

O. sensitiva, (*L*). Sensitive Oxalis. Tottal-vadie, *Tam.*

Stem scarcely any, leaves umbellate, irritable to the touch: leaflets 10-14 pairs, obliquely obovate or oblong, mucronulate, peduncles several from among the leaves, generally longer than the latter: flowers numerous, umbellate, yellow. Flowers nearly all the year.—*Roxb. fl. Ind. II, p.* 457; *W. & A. prod. I. p.* 142; *Wight's Ill. I. t.* 62. *Rheede, IX, t.* 19. Biophytum sensitivum, *DC. Drury, U. P. p.* 336; *Hand-Book* p. 208.

This interesting little plant is rather rare within the percincts of Madras: it has been met with beyond the line of the Railway at Vaserapady. Has grown in the Society's Gardens. We have never seen the plant nearer Madras than 30 or 40 miles northward.

XANTHOXYLACEÆ.

Xanthoxyls.

Trees or shrubs, with exstipulate, dotted leaves, resembling the Rutaceœ, and distinguished by their polygamous flowers. Chiefly found in tropical America. Known species 110.

They have pungent and aromatic qualities, and have been used in medicine, chiefly as tonics and stimulants. Some of them have been called Peppers from their pungency.

nate: leaflets cuneate-oblong or lanceolate, glabrous above, more or less pubescent below: racemes leaf-opposed, often longer than the leaves, many-flowered: flowers two to three together: calyx pubescent: segments subulate: corolla about three times the length of the calyx; vexillum silky, bent back from near its base legumes slightly compressed, linear, slightly falcate, obtuse with a short point, pubescent or glabrous: flowers, small, purple. Flowers from August to September.—*Drury's Useful Plants*, 611 *Cleghorn, Hort. Madr.*—Galega purpurea, *Linn.; Roxb. fl Ind. III*, 386; *Rheede, Hort. Mal. I, t.* 55.—Galega cœrulea *herb Rottl.; W. & A. prod. I.* 213; *Grah. Cat. B. pl. p.* 47 *Voigt. Hort. Cal.* 215.

This little plant is seldom found growing near larger plants it appears to thrive better in large open plains, where the soil is mostly dry: common about Madras.

Œschynomene, (*L.*) *Greek, Aiskunomai*, to be modest; alluding to its sensitive property.

Œ. aspera, (*Linn.*) The Pith plant. Shadei poondoo, also Athoonetthee, *Tam.* Shola, Sola and Phool-sola, *Hind* and *Beng.*

Perennial, 6 8 feet, floating, erect, sometimes branched, glabrous: leaves unequally pinnated: leaflets numerous, linear, obtuse: racemes axillary, few-flowered: calyx 5-cleft, bilabiate, bibracteolate: peduncles and pedicels rough with hairs: calyx and corolla slightly so: corolla papilionaceous: legumes 4-7 jointed, long-stalked, with prickly tubercles on the middle of each joint; margins striated, crenulated: flowers brownish orange. Flowering season from June to August.—*Drury's Useful Plants* 28.—Hedysarum lagenarium, *R.*—*Roxb. fl. Ind. III.* 365; *W. & A. prod. I.* 219; *Wight's Icon. fig.* 299; *Voigt. Hort. Cal.* 219.

This useful plant may be found by the student on the borders of old dilapidated tanks and other open reservoirs of fresh water in the suburbs of Madras, frequently in the society of the beautiful Saccharum spontaneum, with its gracefully nodding, silvery panicles.

The pith, which is often quite white, is converted into a great variety of articles, such as artificial flowers, fishing floats, bottle cases, hats of all shapes, toys, &c. It is, says Major Drury, well adapted for hats, as it is a bad conductor of heat; and for the same reason, a very good cover for bottles, as it would keep the contained fluid from becoming warm.

VACHELLIA. (*W. & A.*) named in honor of the Revd. G. H. Vachell, who contributed largely by means of specimens, to make the Botany of China better known to Europeans.

V. FARNESIANA, (*W. & A.*) Vaday-vullie-marum, *Tam.* Kustoori, Peetooma, *Tel.*

Large shrub or tree; leaves bipinnate; pinnæ 4-8 pair: leaflets linear, 10-20 pair, nearly glabrous; petioles and peduncles more or less pubescent; legumes cylindrical, filled with pulp and two rows of seeds; flowers globular, 2-3 together, each on an axillary peduncle, small, yellow, fragrant.—*Drury's Useful Plants,* 10; *W. and A. prod. I,* 272; *Roxb. fl. Ind. II.* 557, *Wight's Icon.* 300; *Cleghorn, Hort. Madr. Grah. Cat. B. pl. p.* 58; Mimosa Farnesiana, L.—M. indica, *Poir*; Acacia Farnesiana, *Willd.* Wood hard, tough, making excellent ship-knees and tent pegs. *Voigt. Hort. Cal. p.* 264.

ACACIA.

A. SPECIOSA, (*Willd.*) Sirissa Tree, Katuvazei, *Tam.* Dirisana, *Tel.*

A tree 30-40 feet, unarmed: young branches flexuose: leaves bipinnate: pinnæ 1-4 pair: leaflets 4-9 pair, obtuse, oval, glabrous, unequal: peduncles axillary, each with a globular head of flowers on short pedicels, 1-4 together: calyx long, tubular: petals 5, united to beyond the calyx: stamens very long, monadelphous: legumes flat and thin, remotely 8-10 seeded, not opening spontaneously: flowers small, white, fragrant.—*Drury's Useful Plants,* 15; *W. & A. prod. I.* 275. A. Sirissa. *Buch.*

Mimosa speciosa, *Jacq.* Mimosa Sirissa, *Roxb. fl. Ind.* II, 554. *M.* flexuosa, *Rottl. Ainslie.*

The gum of this tree resembles Gum Arabic, and is used like it for ordinary purposes. The wood, it is said, is hard, close-grained and durable, and employed in making furniture, &c.

GUILANDINA. *Juss.*

G. BONDUC. (*Linn.*) Bonduc nut. Nicker tree. Marble Bean. Kalichikai also Getchakai, *Tam.* Getsakaia, *Tel.* Nata-caranja, *Hind.* Gujgah, *Duk.*

Climbing shrub: leaves abruptly bipinnate, more or less pubescent, 3-8 pair, with 1-2 small recurved prickles between them: leaflets oval or ovate: prickles solitary: flowers largish, sulphur colored: spicately racemose: sepals 5, nearly equal; petals 5, sessile: legume ovate, 2-valved, 1-2 seeded, covered with straight prickles: seeds nearly globose. Flowering time, August to October. Cœsalpinia bonduc, *Roxb. fl. Ind. II,* 362. *W. & A. prod. I,* 280. *Drury's Useful Plants,* 362; *Cleghorn, Hort. Madr. Grah. Bomb. Cat.* 60; G. Bonducella, *L. Rheede, II. t.* 22; *Voigt. Hort. Cal.* 244.

The seeds of this plant are common in the bazaars, and are found of various shades of grey, white, slate, yellowish, and a rarer variety beautifully marbled or streaked. They are used by the poorer native boys as marbles: the kernels as well as the leaves are employed by the Vytheans for a variety of diseases, which it would be quite unnecessary to mention here. Several European Practitioners have tried the kernels of the seeds, mixed up with pepper, and have found this compound to be an excellent antiperiodic in the fevers of the country.

CASSIA.

C. ABSUS. Amara-verei, *Tam.* Chaksoo, *Hind.*

Biennial, clammy all over except the leaves: leaves long, petioled: leaflets 2 pair, obovate, obtuse, glabrous, or slightly

hairy beneath: stamens 5, all fertile; lower flowers axillary, solitary, upper ones forming a short raceme: pedicels short, with a bract at their base, and small bracteoles about the middle: legume nearly straight, obliquely pointed, much compressed, sprinkled with rigid hairs, few-seeded: flowers small, yellow.—*W. & A. prod. I, p.* 291.—Senna Absus, *Roxb. fl. Ind. II, p.* 340; Drury U. P. p. 119; *Drury, Hand-Book, vol. I, p.* 383.

We have not seen this plant about Madras, but have reared it from seed got from the bazaar. The seeds are very finely powdered, after having been rendered brittle by heat, and the powder dropped into the eye in cases of recent Ophthalmia. They are reckoned the best of remedies in such cases in Egypt.

ONAGRACEÆ.

ONAGRADS.

THE EVENING PRIMROSE ORDER.

Herbs or shrubs, with alternate or opposite, simple, exstipulate, dotless leaves, and showy tetramerous flowers. Calyx superior, tubular, limb 4-lobed, valvate. Petals usually 4, twisted in æstivation. Stamens epigynous, generally 4 or 8; pollen triangular. Ovary 2-4 celled; styles united; stigma capitate or 4-lobed. Fruit capsular or baccate. Seeds exalbuminous. Chiefly natives of the temperate parts of America. Known species 450. Properties mucilaginous and astringent. Some yield edible roots and fruits. *Balfour's Class Book of Botany.*

To this order belong not only the evening Primrose (Œnothera) but the beautiful Fuchsias also.

We learn from Dr. Cleghorn's Catalogue, 1853, that two species belonging to this group were found by him in the A. H. Gardens then, viz., Œnothera Drummondii, and Clarkia elegans.

LUDWIGIA, (*Roxb.*) In honor of C. D. Ludwig, Prof. of Botany, Leipsic, 1750.

L. PARVIFLORA, (*Roxb.*)

Herbaceous, erect, branched: leaves alternate, lanceolate, entire, lower ones often, and the upper ones sometimes, oblong; flowers shortly pedicellate: capsule obsoletely 4-5 angled, equally thick, longer than broad, shorter than the leaves: seeds crowded in several rows: flowers small, yellow.—*Drury's Useful Plants*, 420; *W. & A. prod.* 336; *Wight's Ill. II. fig.* 101.—L. Jussiœoides, *Wall.* L. oppositifolia, *Linn. Syst. veg.*—L. Zeylanica, *Pers.*—Jussiœa caryophyllœa, *Lam; Roxb. fl. Ind. I.* 419; *ed. Car. I.* 440; *Rheede, II. fig.* 49; *Grah. Cat. B. pl. p.* 75; *Voigt. Hort. Cal.* 34.

A pretty common weed in unfrequented parts of garden compounds.

JUSSIŒA, (*Linn.*)

J. REPENS, (*Linn.*) Neer-caramboo, *Tam.* Herbaceous, glabrous, creeping or floating by means of vesicles round the insertion of the leaves, throwing out roots from the joints: leaves oblong-obovate, obtuse or retuse, petioled; flowers largish-yellow, on longish pedicels, with two minute fleshy abortive bracteoles, at the base of the ovary: tube of the calyx slightly villous, cylindrical, attenuated at the base; lobes 5, lanceolate, acute, twice as short as the 5 obovate emarginate petals.—*W.* & *A. prod. p.* 335; *Voigt. Hort. Cal.* 33; *Roxb. fl. Ind. II*, 401.—J. fluviatilis, *Blume.* Cubospermum palustre, *Lour.; Rheede, Hort. Mal.* II. 51; *Grah. Cat. B. pl. p.* 75.

This small but remarkable plant, with its floats of spongy, cellular tissue, is found commonly in marshy ground, but does not develope its pith-like supports unless when growing in water. We have repeatedly gathered specimens in the district around the Powder Mills.

HALORAGACEÆ.

HIPPURIDS.

Herbs or undershrubs, generally aquatic, with alternate, opposite or whorled leaves. Flowers small, frequently incomplete and

unisexual. Fruit dry and indehiscent, membranous or bony : seed solitary, pendulous. This order is regarded as a degeneration or imperfect form of Onagraceæ. Species 70. Found in all parts of the world.

TRAPA, (*L.*) abridged from *calcitrapa*, the Latin name of an instrument called *caltrops*, furnished with four spines, formerly used in war to impede the progress of cavalry ; the fruit of some of the species is furnished with four spines.

T. BISPINOSA, (*Roxb.*) Singhara nut. Singhara, also Panee p'hul, *Hind.*

Plant herbaceous, floating ; roots fibrous ; lowest leaves opposite and divided into capillary segments, upper ones crowded, deltoid, toothed, tomentose beheath ; petiole swollen in the middle, rendering the plant buoyant while in flower ; peduncles shorter than the petioles, flowers axillary, calyx villous, cohering with the ovary, limb 4-partite ; petals 4 ; crown of the ovary 8-furrowed, the margins curled ; ovary 2-celled ; ovules solitary, pendulous : stigma capitate : nut 1-celled, indehiscent, very hard, turbinate, crowned with 2 horns, conical, very sharp, barbed backwards : flowers smallish, white.—*Drury, Hand-Book, I. p.* 452 ; *Roxb. fl. Ind. I, p.* 428 ; *W. & A. prod. I. p.* 337 ; *Roxb. Cor. III. t.* 234 ; *Rheede, Mal. XI, t.* 33.

This is rather an ornamental plant, and yields an important article of food in several parts of India. By the natives the nuts are highly relished, whether boiled, toasted or fried : commonly sold in the bazaars in different parts of Northern India.

Attempts are being made just now to introduce the *Singhara* nut into Madras ; and there is every certainty of success.

MESEMBRYACEÆ or FICOIDEÆ.

FICOIDS.

For description of the order, see *Hand-Book, p.* 90

SESUVIUM, (*Linn.*) Meaning unknown.

S. PORTULACASTRUM, (*Rottler.*) Vungaravasee, *Tam.* Mangareedookooroo, *Tel.* A fleshy, herbaceous plant, glabrous; stems prostrate, rooting at the joints: leaves opposite, oval, spathulate or oblong-linear. Flowers axillary, alternate, solitary, pedicellate, small, green, internally white: calyx 5-partite, persistent, colored inside: petals none :stamens inserted into the bottom of the calyx: ovary free, sesile; style wanting; stigmas 3: grows over various parts of India near the sea-side. Used by the poorer natives as a pot-herb.—*Drury, Hand-Book, I, p.* 474; *S. repens, Rottl.*; *W. & A. prod. I. p.* 361; *Rumph. Amboin. VI. t.* 72, *f.* 1; *Drury, Hand-Book, I, p.* 474.

SAXIFRAGACEÆ.

SAXIFRAGES.

Herbs with alternate leaves. Flowers unsymmetrical. Calyx of 4-5 sepals more or less united at the base. Petals 4-5 or wanting. Stamens 5-10, perigynous or hypogynous. Ovary superior or more or less inferior, consisting of 2 carpels which diverge at the apex. Fruit capsular, 1-2 celled. Seeds small, numerous. They have generally cœspitose leaves and glandular stems: flowers generally white, sometimes yellow or red. Natives chiefly of Northern Alpine districts, sometimes growing as high as 16,000 feet above the level of the sea. Species about 310. Astringency pervades the whole order.—*See Balfour, Bennett & Lindley.*

VAHLIA, (*Thunb.*) In honor of Martin Vahl, a famous Botanical author.

V. OLDENLANDIOIDES, (*Roxb.*)

Herbaceous: stem erect, slightly pubescent, dichotomously branched: leaves opposite, linear-lanceolate, pubescent, entire: peduncles solitary, rather shorter than the leaves, 2-flowered: capsules nearly globose: seeds minute, flowers white.—*Drury, Hand-Book, I. p.* 482; *Roxb. fl. Ind. II. p.* 489; *W. & A. prod. I. p.* 364; *Wight, Icon. t.* 562; *Ill. II. t.* 115.

UMBELLIFERÆ.

UMBELLIFERS.

For characters of the order, see *Hand-Book, p.* 92.

ANETHUM, (*L.*)

A. SOWA, (*Roxb.*) Indian Dill. Sada-cooppei, *Tam.* also Shoyee keerei (applied to the leaves of the plant.) Sompa, *Tel.* and Sowa, *Hind.*

Annual, erect, glabrous: leaves decompound: lobes linear, setaceous: involucres and involucels wanting: fruit oblong: seed slightly convex, flat in front: flowers small, yellow. The seeds are to be met with in most bazaars in India.—*Roxb. fl. Ind. II.* 96; *Drury, U. P. p.* 39; *Wight, prod. I. p.* 372; *Wight, Icon. fig.* 572; *Drury, Hand-Book, p.* 495; *Voigt. Hort. Cal. p.* 22.—A. graveolens, *Wall.*

CINCHONACEÆ.

CINCHONADS.

See page 96.

SPERMACOCE, (*L.*) From *sperma,* a seed, and *akoke,* a point in allusion to the capsule being crowned by the calycine points.

S. HISPIDA, (*Linn.*) Shaggy Button-weed. Nuttei-choorie, *Tam.* Madana, *Tel.*

Plant 1½ foot, herbaceous, diffuse, hairy: leaves from obovate-oblong to roundish, somewhat mucronate, flattish or waved; bristles of stipules longer than the hirsute sheath: flowers axillary, 1-4 together, sessile: tube of corolla rather wide: fruit hirsute or villous, oval, crowned with the 4 calycine teeth: flowers small, purplish. Blossoms nearly all the year.—*Drury, Useful Plants,* 594; *W. & A. prod. I.* 438; *Roxb. fl. Ind. I.* 373. *ed. Car.* I. 379.—S. hirta, *Roth.*—S. scabra, *Willd; Rheede,* IX. *fig.* 76. *Drury, Hand-Book, I. p.* 580; *Voigt. Hort. Cal.* 394.

To be found commonly about Madras. The capsule is two-celled, with one seed in each cell : seeds have the appearance of *miniature coffee*—flat and grooved on the inside and convex externally.

COMPOSITÆ.—(ASTERACEÆ.)

For description of the order, *see Hand-Book, p.* 103.

VERNONIA, (*Schreb.*) Named for Mr. Vernon, English Botanist.

V. CINEREA, (*Less.*)

Ash colored Flea-bane. Nei-chettie, *Tam.* Gherutti kama, *Tel.*

Erect, annual : leaves oblong, flowers panicled : corolla light-purple, cylindrical, twice the length of the calyx. Stem round, a little downy and finely furrowed. Leaves alternate, petioled, ovate, and ovate-cordate, crenate, rugose, often waved, somewhat pubescent, decurrent to the base of the petioles, from one to three inches long. Flowers terminal, numerous, sub-fastigiate, small, purple colored : florets equal, all hermaphrodite. Calyx imbricate, with narrow lanceolate, acute, downy scales. Achenia white ; pappus hairy. Flowering season, from January to March.—*Drury, Useful Plants,* 647 ; *Roxb. fl. Ind. III.* 406.—Conyza cinerea, *Linn.*—C. purpurea, *Forst.*—C. mollis, *Willd.*—Serratula cinerea, *Roxb* ; *Rheede, IX. fig.* 64 ; *Rumph. VI. t.* 14. *f.* 1 ; *Voigt. Hort. Cal.* 405 ; *Grah. Cat. B. pl. p.* 96.—*Drury, Hand-Book, II. p.* 4.

A little plant from one to two feet high, growing almost every where. Its flowers are very small, requiring a microscope, or at least, a good lens, in order to examine their structure.

ELEPHANTOPUS, (*Linn.*) From *elephas,* an elephant, and *pous,* a foot, alluding to some of the leaves which resemble an elephant's foot.

E. SCABER, (*Linn.*) Aunei shovathee, *Tam.* Stem dichotomously branched, strigose ; radical leaves rough, crenated cuneiform, long attenuated towards the base ; stem leaves lanceolate ; floral ones broadly cordate-ovate, acuminate, hoary : capitula of several (3-5, usually 4) equal flowers, enclosed by leaves ; flowers purple.—*See Drury Hand-Book, II, p.* 12 ; *Drury, U. P. p.* 204 ; *Wight, Contrib. p.* 8 ; *Wight, Icon. t.* 1086 ; *Roxb. fl. Ind. III, p.* 445 ; *Rheede, Mal. X, t.* 7, Found growing under shady trees.

ECLIPTA, (*Linn.*)

E. ERECTA, (*Linn.*) Kurselankennie, also Kianthagarei, *Tam.* Goontagelinjeroo, *Tel.* Bungrah or Bagrah, *Hind.*

Stem either prostrate or erect : leaves lanceolate, serrate, somewhat waved : flowers nearly sessile, alternate in pairs, corolla white. Flowers all the year.—*Drury, Useful Plants,* 296; *Wight's Contrib. p.* 17.—E. prostrata, *Roxb. fl. Ind. III,* 438.—E. adpressa, (*Mönch.*)—Verbesina alba, (*Linn.*)—Cotula alba, (*Linn.*)—*Ainslie's Mat. Med. II,* 129.—Micrelium asteroides, *Forsk. Rheede, X, fig.* 41 ; *Drury, Hand-Book, II, p.* 46. Common in wet clayey soils. Sometimes found growing on the sides of wells and on old walls. Roxburgh considered the E. erecta, prostrata and punctata to be the same species, varying in form from age, soil and situation.—*Drury, Roxb. Ainslie.*

It is prescribed by the Hindoos in Elephantiasis, Beriberi and chronic liver disease, &c. It is very remarkable that another of the Compositæ (Leontodon Taraxacum) should have been employed in Europe also, in the treatment of liver disease.

SIEGESBECKIA, (*Linn.*) Named after Siegesbeck, a German Physician.

S. ORIENTALIS, (*Linn.*) Leaves ovate, cuneate, acuminate at the apex, thickly toothed, upper ones oblong, lanceolate :

capitula heterogamons : florets of the ray 1-series, ligulate or deformed, of the disk tubular, 3-5 toothed : involucre 2-series, the 5 exterior ones linear, spathulate, spreading, interior ones viscidly pilose on the back; flowers yellowish. A very odd looking Composite.—*See Drury, Hand-Book, II. p.* 47 ; *Wight, Contrib. p.* 17 ; *Wight, Icon. t.* 1103 ; *Roxb. fl. Ind. III. p.* 439.

GUIZOTIA, (*Cass.*)

G. OLEIFERA, (*D.C.*) Ramtil, *Duk.* Kalatil, *Hind.* Valesuloo, *Tel.* Kauna-yelloo, *Tam.*

Annual, herbaceous, erect : leaves opposite, long lanceolate, coarsely serrate : peduncles elongated, sub-corymbose : flowers large, bright yellow. Flowering season, November and December.—*Drury, Useful Plants,* 363.—Helianthus oleifera, *Wall.*—Ramtilla oleifera, *D. C.*—Anthemis Mysorensis, *Herb. Madras.* Polymnia Abyssinica, *Linn. fil.*—Parthenium luteum, *Spreng.* Verbesina sativa.—*Voigt. Hort. Cal.* 414 ; *Roxb. fl. Ind. III,* 441 ; *Wight's Ill.* II, 132 ; *Drury, Hand-Book, II. p.* 50.—Commonly cultivated in Mysore and the Deccan for the sake of the oil yielded by its seeds. The Ramtil oil is used either as lamp oil, or as a substitute for the Gingely oil. It grows readily in Madras from seed obtained from up-country, and requires little or no care. The traveller from Madras to Bangalore meets with it frequently in the fields at the end of his journey.

EMILIA, (*Cass.*)

E. SCABRA, (*D. C.*) Stem ascending, leafy, and densely hairy at the base, naked, smooth at the apex, lowest leaves lyrate, cauline ones cordately half-stem clasping, ovate, lanceolate, rather obtuse, dentate, rough on both sides from scattered hairs : corymbs terminal, bearing 5 to 7 capitula, involucre 1 series, enclosing about 100 flowers : flowers a shade of red.—*See Drury, Hand Book, II, p.* 71 ; *Wight, Contrib. p.* 24 ; *Icon. t.* 1123.

JASMINACEÆ.

JASMINWORTS.

For characters of the Order, *see Hand-Book, p.* 115.

JASMINUM. (*Forsk.*) Gr. *Jasme.* perfume.

J. AURICULATUM. (*Linn.*) *sp. pl. ed. Willd.*

Shrubby, twining. Leaves opposite, ternate : leaflets, the pair very small, ovate, opposite, sometimes wanting ; the terminal one at least ten or fifteen times larger ; all ovate, entire, with a minute point, smooth, except when young, when they are downy. Corymbs terminal, always 3-forked, dense. Flowers small, white, with a pale-greenish tube, sweet-smelling, though less fragrant than those of the former species. Calyx 5-notched, with a round firm glandular process on the outside of each. Corol ; border from 5-to 8-cleft, divisions oblique, obtuse. Stigma clavate. Berries globular.—*Roxb. fl. Ind. I,* 98 ; *ed. Carey, I. p.* 96 ; *Grah. Cat. B. pl. p.* 111 ; *Voigt, Hort. Cal. p.* 551 ; *Wight's Icon. t.* 698 ; *Hort. Mal. VI, t.* 53 ; *Drury, Hand-Book,* II. *p.* 179.

ASCLEPIADACEÆ.

ASCLEPIADS.

For description of the Order, *see Hand-Book, page* 119.

HEMIDESMUS, (*R. Br.*) From *hemisus,* half, and *desmos,* a tie ; alluding to the filaments.

H. INDICUS, (*R. Br.*) Country Sarsaparilla. Nunnaree, *Tam.* Soogundapala, *Tel.* Mugraboo, *Hind.* Unantomool, *Beng.*

Twining : stem glabrous : leaves from cordate to ovate cuspidate, passing into narrow linear, acute, often oblong-lanceolate : cymes often subsessile, sometimes peduncled : scales of the corolla obtuse. Follicles slender, straight : flowers pale-green outside, and on the inside, dark blood-colored. Flowering during the wet season.—*Drury, Useful Plants,* 367 ; *Wight's*

Contrib. p. 63 ; *Wight's Icon. fig.* 594 ; Ceropegia tenuifolia, *Linn. Mant.* 346 ; Asclepias pseudosarsa. Periploca Indica, (*Willd.*) *Voigt, Hort. Cal.* 544 ; *Drury, Hand-Book,* II, 213. *Roxb. fl. Ind. II.* 39 ; *Rheede, Hort. Mal. IX, fig.* 34 ; *Ainslie, Materia Indica, I.* 381 ; *Cleghorn, Hort. Madr.* 542 ; *Madras Q. Journal of Medl. Science* ; *Grah. Cat. B. pl. p.* 122.

The roots of this plant, which are long and slender, (from the thickness of a crow-quill to that of a finger) are covered with a brownish bark, possessing a peculiar and pleasant fragrance. In its dried state, this root is supplied to our hospitals instead of sarsaparilla, for which it is considered an excellent substitute.

The plant thrives any where : common about Madras.

Oxystelma, (*R. Br.*) From *oxys*, sharp, & *stelma*, a crown ; the leaflets of the corona are acute.

O. esculentum, (*R. Br.*)

Perennial, twining : stem and branches numerous, round, smooth. Leaves opposite, short-petioled, linear, tapering to a fine point, round at the base, entire, smooth, from 4-6 inches long, and about ⅜ of an inch broad. Racemes lateral, long, few flowered. Flowers rather large, beautiful, of a rosy white, striated with purple veins, inodorous. Follicles oblong, inflated. Juice milky. Asclepias rosea, *Roxb. fl. Ind. II.* 40.—Periploca esculenta, *Roxb. Corom. I. t.* 11. *Willd, and König, Voigt, Hort. Cal.* 541 ; *Wight's Contrib. p.* 54.

Its elegant flowers, (says Dr. Roxburgh,) render it well deserving of a place in the flower garden. We saw the plant, in the A. H. Society's gardens during the time Mr. Brown was compiling his Hand-Book. He told us that he had brought it in from the country, so that its omission here must have been an oversight.

Dœmia. (*R. Br.*)

D. EXTENSA. (*R. Br.*)

Vaylie partie, also Ootamunnie, *Tam.* Jutuga, *Tel.* Oobrun, *Duk.* Sagowanie, *Hind.*

Twining, shrubby: leaves roundish, cordate, acuminated, cute, anricled at the base, downy, glaucous beneath: peduncles and pedicels elongated, filiform: margins of corolla ciliated: owers in umbels, dirty-white or pale-green, frequently purplish iside: follicles covered with inoffensive prickles.—*Drury, Useful 'lants,* 262; *Drury, Hand-Book, II. p.* 225; *Don's Mill. IV.* 56; *Voigt. Hort. Cal.* 541; *Wight's Contrib. p.* 59; *Wight's con. fig.* 596.—Cynanchum extensum, *Jacq.*—C. cordifolium, *Retz.*—Asclepias echinata, *Roxb. fl. Ind. II.* 44; *Grah. Cat. l. pl. p.* 122.

This plant abounds in milky juice. Odor of flowers offensive; fibre is procured from the stems, and a fine silky cotton (coma) om the seeds, which gained great attention, not only here at ie Exhibitions, but in England and France also, as promising, om experiments made, to be of use in the manufacture of material ir clothing, &c.—*Madras Exhib. Reports.*

TYLOPHORA. (*R. Br.*) From *typhos*, a swelling, and *phoreo*, bear, alluding to the ventricose pollen masses.

T. ASTHMATICA, (*W. & A.*) Emetic Swallow wort.—Coegam, also Coorinja, *Tam.* Kaka-pulla, *Tel.* Untamool, *Hind.*

Perennial, twining: leaves opposite, ovate-roundish, or corate-ovate; acuminated, glabrous above, downy beneath: petioles channelled. Umbels solitary, axillary: peduncles and pedicels twice the length of the petioles, round, downy. Flowers eenish yellow, internally purplish: calyx divisions lanceolate, ry acute; corolla 5-parted. Follicles glabrous, divaricate. -*Drury, Useful Plants,* 635; *Wight's Contrib. p.* 51; *Wight's Icon. t.* 1277—Asclepias asthmatica, *Roxb. fl. Ind. II.* 33; A. vomitoria, *Koen.* Cynanchum Ipecacuanha, *Willd.*—Tylophora pubescens and Hoya planiflora, *Wall.*

See also Ainslie, Materia Indica, II. 83 ; *Madras Quarterly Journal of Medical Science*; *Voigt. Hort. Cal.* 539 ; *Drury, Hand-Book*, II, *p.* 237.

This is by all accounts, *one* of the most important medicinal plants in India, and will no doubt, ere long, be used as a safe and efficient substitute for Ipecacuanha by European practitioners.

LOGANIACEÆ

LOGANIADS.

For characters of the Order, *see Hand-Book, p.* 128.

STRYCHNOS. (*Linn*). The Greek name of the *Solanum.*

S. POTATORUM. (*Linn.*) Clearing-nut tree.—Tettan-cottay marum, *Tam.* Tsilla ghenzaloo, Chil beenj ka jah'd *Hind.*

Tree : calyx 5-parted : corolla funnel shaped : leaves opposite, oval, glabrous, pointed : bark deeply cracked : corymbs from the tops of the old shoots round the base of the new ones, bearing, in ternary order, many small, greenish yellow, fragrant flowers : berry shining, black when ripe, 1 seeded. Flowering season, April—May.—*Don's Mill. IV.* 65. ; *Roxb. fl. Ind. I.* 576 ; *Roxb. Cor. I. fig.* 5 ; *Ainslie, Mat. Ind. II. p.* 420. ; *Drury, Useful Plants,* 602 ; *Wight's Ill.* 156 ; *Cleghorn, Hort. Madr.*—*Drury, Hand-Book,* II, *p.* 159.

This tree was found growing in the A. H. Society's gardens in 1853, and is most probably there now. A living specimen can be seen in the compound of the Medical College, and its site has been well chosen, for it stands alongside the S. Nux Vomica ; thus exhibiting the difference at one view. Even when not in flower or fruit, the one can never be mistaken for the other. The S. potatorum has a *rusty-colored, deeply cracked bark,* with its leaves having one principal midrib, (unicostate) with the secondary veins diverging to the margin, feather veined) while the S. Nux Vomica is covered with

smooth, ash-colored bark, and its leaves with three large primary eins or midribs proceeding from base to apex (tricostate—con-ostate) : there are also two other smaller veins running from ie base round the margin of the leaf.

The seeds of this plant are used all over the country for learing muddy water, and are always to be had at the bazaars. One of the seeds is well rubbed round the inside of an earthen essel of water for a short time, and then put aside : very soon the npurities subside, leaving the water clear and wholesome. Alum also has the property of purifying water in this manner, ut it cannot be had so readily up country as the Clearing ut. *Roxb. Drury.*

The wood is hard and durable, and used for many economical purposes. *Drury.*

GENTIANACEÆ.

GENTIANWORTS.

For characters of the order, *See Hand Book, p.* 129.

ADENEMA.

A. HYSSOPIFOLIUM, (*Don's Mill.*) Vallaragu or Voellerkoo, *Tam.* Nellagullie, *Tel.* Chota Chiretta, *Hind.*

Annual, herbaceous : stem quadrangular, angles slightly winged : leaves opposite, decussate, linear-lanceolate, tapering at the base, embracing the stem with the short petioles, 3-nerved paler below : calyx 5 cleft ; segments margined, reflexed at the point, permanent, closely embracing the base of the mature capsule : corolla tubular ; 5 cleft ; segments spreading, oblique at the base, remaining attached to the capsule till the latter bursts : flowers 6-8 together, in axillary whorls, sessile, white : capsule 2-valved, 1-celled : seeds numerous, small, round, white.

Flowering season, July—September.—*Drury, Useful Plants,* 186.—Gentiana Hyssopifolia, *Linn.*—*Roxb. fl. Ind. II. p.* 71.—Exacum Hyssopifolium, *Willd.*—Gentiana verticillata, *Linn. Zeyl.*

Roxb. fl. Ind. II. 71.—Slevogtia verticillata, *Don.*—*Voigt, Ho Cal.* 520.—Hippion Hyssopifolium, *Spreng.*—Cicendia Hy sopifolia, *Adans.*—*Lindl. flor. Med.* 520; *Wight. Ill. fig.* 60 —Slevogtia orientalis, (*D. C.*)—*See Drury, Hand Book, I. p.* 26

A pretty little plant, growing on moist ground. Commo Worth looking for, as the order is an important one.

An excellent stomachic bitter, and used in this country f much the same purposes as Gentian or Kreata.

CONVOLVULACEÆ.

Bindweeds.

See Hand Book, p. 136.

Cressa. (*Schreb.*) From *Cressa,* a native of Crete; t plant is plentiful there.

C. Indica, (*Willd.*)

Annual, *erect,* ramous, hoary. Stem from 6-8 inches hig Branches numerous, alternate, hairy. Leaves alternate, ve numerous, sessile, the lower cordate; the upper ovate a lanceolate; all are hairy, soft and small. Flowers termin sessile, small, numerous, white; when fresh-blown, fragra Bracts like the leaves. Calyx 5-leaved: corolla, tube campan late; segments revolute, out-side of their apices hairy, witherin anthers oblong; stamens inserted into the bottom of the tub stigma large, globular. Capsule superior, 2-celled, with fro one to four seeds in each.—*Roxb. fl. Ind. II.* 72; *Wight, I II.* 168; *Drury, Hand Book, II. p* 320, Cressa Cretica.

A small, handsome annual, flowering during the wet seaso Found generally on sandy, salt ground on the coast.

It is rather a puzzle to the young Botanist, as it differs its habit from most of the other individuals belonging to th order. Rather scarce.—*See Roxb. fl. Ind. II. p.* 72; *Wight, I II. p.* 168.

BORAGINACEÆ.

Borageworts.

For description of the order, *See Hand Book, p.* 145.

Coldenia, (*Linn.*) Named in honor of C. Coldenia, a North American Botanist.

C. procumbens, (*Linn.*) Sheruppaddei, *Tam.* Hamsapadu, *Tel.* Tripungkhi, *Hind.*

Stems procumbent, hirsute: leaves short petioled, obovate, unequally produced at the base above the petiole, plicate, coarsely serrated, with adpressed villous hairs above, beneath hirsute: flowers axillary, solitary, sessile, small, white: nuts 4, wrinkled, rough. It is a small annual, spreading *quite flat* on the ground. Very common on dry rice fields during the cold season. In Madras, it is often seen surrounding tanks, ditches, &c.—*See Drury, Hand Book, II. p.* 337; *Drury, U. P. p.* 154; *Roxb. Fl. Ind. I, p.* 448.

LABIATÆ vel LAMIACEÆ.

Labiates.

For characters of the order, *See Hand Book, p.* 157.

Ocymum, (*Linn.*) From *ozo,* to smell; alluding to the fragrance of the plants.

O. cristatum, (*Kon. M. S. S.*)

Stem erect, annual or biennial, 4 sided, slightly hairy, branchy, from 12-18 inches high, angles rounded, sides grooved. Branches opposite. Leaves opposite, petioled, oval, crenate-serrate, both sides covered with innumerable, minute, glandular pits. Racemes terminal, verticelled, verticels 6-flowered. Bracts opposite, linear, longer than the flowers, sometimes a little twisted, *caducous,* each having a large, round, permanent, concave gland, into which it was or is inserted. This is an excellent specific mark. Flowers of a pale rose-color, projecting horizontally.

Stamens equal, more than twice the length of the corolla. Note. The long, linear bracts, with their concave, glandular receptacles and the long stamens, are excellent specific marks.

A native of barren spots, such as old dry walls. Flowering time, wet season. Unlike many of the species of Ocymum as well as of other genera of the Labiatæ, it is entirely destitute of odour.—*Roxb. fl. Ind. III. p.* 19.—(O. ascendens, *Willd.*) *Drury, Hand-Book, II. p.* 516.

ANISOCHILUS, (*Wallich.*) From *anisos*, unequal, and *cheilos*, a lip.

A. CARNOSUS, (*Wall.*) Fleshy, or Thick-leaved Lavender. Karpoora-vullie, *Tam.* Litakee-pungerie, *Duk.*

Small plant: stem partly decumbent—partly erect, tetragonal: leaves petiolate, ovate-roundish, crenated, cordate at the base, thick, fleshy, tomentosely villous on both surfaces: spikes on long peduncles: calyx with upper lip with ciliated edges; lower lip truncate, quite entire: corolla bilabiate, upper lip bluntly 3-4 cleft, lower lip entire: flowers lilac. Flowering season, June—September.—*Drury, Useful Plants,* 59; *Drury, Hand-Book, II. p.* 533; *Don's Mill. IV.* 685; *Rheede, Hort. Mal. X. fig.* 90.—Lavandula carnosa, *Linn. Amœn.*—Plectranthus carnosus, *Sm.*—P. dubius, *Spreng.*—P. strobiliferus, *Roxb. fl. Ind. III.* 23.

Cultivated in Madras. The whole plant has an agreeable camphoraceous odour, as its Tamil name implies. Is administered in coughs and colds by the Natives.

ACANTHACEÆ.

ACANTHADS.

For characters of the order, *see Hand-Book, p.* 168.

ASTERACANTHA, From *aster*, a star, and *akantha*, a spine.

A. LONGIFOLIA, (*Nees.*) Neer-moollie, *Tam,* Neer-goobbie, *Tel.* Gokshura, *Hind.*

Annual: stem erect, bluntly quadrangular, hispid: leaves, opposite, ensiform, very long: calyx 4-cleft: corolla funnel-shaped, 5-cleft, one division deeper than the rest: flowers in whorls, axillary, blue or bright violet: spines 6 in each verticel, between the leaves and flowers, long, awl-shaped. Flowering season July—December.—*Drury, Useful Plants,* 83; *Don's Mill. Wight's Icon. fig.* 449.—Barleria longifolia, *Linn.*—Ruellia longifolia. *Roxb. fl. Ind. III.* 50; *Rheede, Hort. Mal. II. fig.* 45; *Drury, Hand-Book, II. p.* 447.

Found in damp situations, such as fields, borders of water courses, ditches, &c.

GENDARUSSA, (*Nees.*) An alteration of the Indian name.

G. TRANQUEBARENSIS, (*Nees.*) Tavashoo Moorunghie, also Poonakoo-poondoo, *Tam.* Pindi-konda, *Tel.*

Herbaceous: leaves opposite, short-petioled, oval or round entire, pretty smooth: flowers axillary, solitary, rising into a terminal spike: bracts orbicular, retuse; the linear bracteoles equal to the calyx. Flowers, a mixture of pale yellow and red. —*Drury Useful Plants,* 346; *Roxb. fl. Ind. I.* 130; *Wight, Icon. fig.* 462.—Justicia Tranquebarensis, *Linn. Sp. pl. ed. Willd. I.* 99; *Drury, Hand-Book II. p.* 468.—Adhatoda Tranquebarensis, (*Nees.*)

Grows in a dry barren soil. Flowering season, wet and cold seasons.

G. VULGARIS, (*Nees.*) Caroo-nochie, *Tam.* Nulla-vavali, *Tel.* Kali-thumbali, *Duk.*

Shrub 3-4 feet: leaves opposite, lanceolate, elongated, frequently a little scolloped, smooth;—midrib and secondary veins dark purple: flowers in whorls on terminal spikes: upper lip undivided: flowers pale, greenish-white, sparingly stained with purple.—*Drury, Useful Plants,* 347; *Wight, Icon. II. fig.* 468.

—Justicia Gendarussa, *Roxb. fl. Ind. I.* 128 ; *Rheede* IX. *fig.* 42 ; *Cleghorn, Hort. Madr. Ainslie, II. page* 67 ; *Drury, Hand-Book, II. p.* 469.

Pretty common : easily recognized by its dark-purple stems and midribs, quite a contrast to its light green leaves.

RHINACANTHUS,(?) From *rhin*, a snout, alluding to the elongation of the capsule.

R. COMMUNIS, (*Nees.*) Naga-mullie, *Tam.* Nargamollay, *Tel.* Palek-joohie, *Hind.*

Shrub 4-5 feet : stem erect, green ; young shoots jointed : leaves opposite, broad-lanceolate, short petioled, a little downy below, entire : panicles corymbiform, axillary and terminal, trichotomous : peduncles and pedicels short, round, a little downy : corolla with a long, slender, compressed tube ; under lip broad, 3-cleft : upper one erect, linear, sides reflected, apex bifid : flowers smallish, white. Flowering season, March—April. —*Drury, Useful Plants,* 537 ; *Wight's Icon. fig.* 464 ; *Roxb. fl. Ind. I.* 120 ; *ed. Car. I.* 121.—Justicia Nasuta, *Linn.*—*Rheede, Hort. Mal. IX. fig.* 69 ; *Cleghorn, Hort. Madr.*—*Drury, Hand-Book, II. p.* 471.

Dr. Roxburgh tells us that the roots of this plant are used by the natives as an antidote to the bites of poisonous snakes; hence the *Telugu* and *Tamul* name *Naga-mulli*, or Jasmine of the cobra de capella; but it strikes us as very probable that it not only got its name, but its reputation also from the singular appearance of its flowers,—the *upper erect lip* of the corolla reminding one of an irritated cobra. Only found in gardens cultivated.

ANDROGRAPHIS, (*Wall.*) From *aner*, a man, and *grapho*, to write.

A. ECHIOIDES, (*Nees.*) Cobarum-thaunghee, *Tam.* Herbaceous, hairy : leaves oblong, sub-sessile, somewhat crenated : racemes rigid, reflexed : capsules 4-seeded : flowers whitish with

dark purple spots.—*See Drury, Hand-Book, II. p.* 485; *Roxb. fl. Ind. I. p.* 118; *Wight, Icon. t.* 467; *Hort. Mal. IX. t.* 46. Generally found on old walls, particularly in unfrequented places.

CHENOPODIACEÆ.

CHENOPODS.

For description of the order, *see Hand-Book, p.* 181.

SALICORNIA, (*Tourn.*) From *sal,* salt, and *cornu,* a horn.

S. BRACHEATA, (*Roxb.*) Oomerie-keerci, *Tam.* Quoiloo, *Tel.*

Perennial: stems erect: branches numerous, decussate, joints clubbed: spikes cylindrical, flowers greenish, conspicuous, 3-fold, opposite: calyx a flask-like fleshy sustance with a slit for the stamen and style.—*See Roxb. fl. Ind. I. p.* 84; *Car. I. p.* 82; *Wight, Icon. t.* 738; *Drury, U. P. p.* 387. Grows plentifully on low wet ground, generally such as is over-flowed by the spring-tides. It yields a Barilla for soap and glass. Found so abundantly on the coasts of India that by incineration the plant might supply Barilla enough for the whole world.

S. INDICA, (*Vahl., Roxb.*) Pavala-poondoo, Pagara-poondoo, also Perroomerie, *Tam.* Quoia pippali, *Tel.* Perennial, diffuse: joints gibbous: spikes cylindrical: flowers inconspicuous, opposite, 3-fold, hid by the upper margin of the next floral leaf below. Calyx as in the former, with a slit for the style. "In this species," says Dr. Roxburgh, "I have never been able to discover even the rudiments of a stamen." Yields a Barilla for soap and glass. It is pickled, and otherwise used as food, by the Natives.—*Roxb. fl. Ind. I. p.* 85; *ed. Car. I.* 83; *Wight, Icon. t.* 737. Found growing with the S. BRACHEATA on similar ground.

SALSOLA, (*Linn.*) From *salsus,* salt; in allusion to the saline properties of the species.

S. INDICA, (*Willd.*) Yella kura *Tel.* Stems perennial, erect, branches diffuse; leaves linear, semi-cylindrical, fleshy,

smooth ; in young plants green, in older, coloured. Spikes terminal, erect, compound, or panicled, glomerate, leafy. Flowers minute, greenish, aggregate in the axils of the floral leaves : calyx 5-cleft : segments concave within, with slightly membranaceous margins. Found growing on the salt moist ground near the sea, in company with the *salicornias*, and the Sphenoclea Pongatium.—*Roxb. fl. Ind. II p.* 62 ; *Drury, U. P. p.* 389 ; *Hort. Cal. p.* 322.

'The green leaves of this species are universally eaten by all classes of natives who live near the sea, where it is to be had ; it is reckoned very wholesome, and must be so, as during times of scarcity and famine, it is a very essential article of the food of the poorer natives ; they dresss it in their curries, &c. The leaves of this plant alone, the natives say, saved many thousand lives during the famine of 1791, 2, and 3 ; for while the plant lasted, most of the poorer classes who lived near the sea, had little else to eat.'—*See Roxb. fl. Ind. II.*

S. NUDIFLORA, (*Willd.*) Narie-oomarie, *Tam.* Rawa-kada, *Tel.*

Perennial : prostrate, rooting ; extremities of branches ascending ; young parts smooth, reddish : leaves entire, linear, obtuse, fleshy : spikes terminal, erect, long, compound, leafless ; flowers very small, greenish, fascicled, trigynous. Gathered for fuel by the natives ; never eaten on account of its very saline taste. This species also yields a kind of Barilla used for making soap and glass.—*See Roxb. fl. Ind. II. p.* 60 ; *Drury, U. P. p.* 389 ; *Hort. Cal. p.* 322 ; *Grah. Cat. B. pl. p.* 170.

EUPHORBIACEÆ.

SPURGEWORTS.

For charactors of the order, *see p.* 189.

EUPHORBIA.

E. PILULIFERA, (*Linn.*) Pill-bearing Spurge. Amaum patcheh arisee, *Tam.*

Plant small, 1-foot, erect, stem round, covered with reddish-brown hairs; leaves oblong, oblique and scarcely serrate; peduncles two-headed, alternately axillary; flowers small, lilac, reddish or greenish; fruit tricoccous.—*Vide London, Encycl. Plants, p.* 402; *Ainslie, Mat. Ind. II.* 13; *Jac. Icon. III. t.* 478.

It is very remarkable that this plant has not been noticed (at least under this name) by any of the later Indian Botanists: it answers very much to the description given of the E. hirta, *Willd.* in *Roxb. fl. Ind. II.* 472. The Rev. Dr. Rottler was of opinion, as appears by his MS. notes that the *E. pilulifera* was simply a variety of the *E. hirta.* One of the commonest plants in Madras; very milky. Is eaten by goats, hares, &c., and used in medicine by the Tamools.

E. THYMIFOLIA, (*Linn.*) Thyme-leaved Spurge. Chinamaum-patcharisee, *Tam.* Biddarie nanabeeam, *Tel.*

Plant small; branches pressing flat on the earth, reddish-brown or gravel-colored, hairy: leaves opposite, obliquely ovate, serrate: flowers axillary, crowded, on short peduncles: flowers small: greenish or colored.—*Drury, Useful Plants,* 318; *Roxb. fl. Ind. II.* 473; *Ainslie, Mat. Ind. II.* 75.

Very common here: found chiefly on dry gravelly soil; covers a good part of the roads in the People's Park.

FLUGGEA, (*Willd.*) In honor of John Flugge, a German Cryptogamic Botanist.

F. LEUCOPYRUS, (*Willd.*) Varrapoolah, *Tam.*

Diœcious, shrubby, poor-looking, branches numerous: thorns scattered, in a bad soil more numerous, horizontal, large, leaf flower-bearing; they may be called spinous-pointed branchlets. Leaves scattered, short-petioled, obcordate, smooth, entire. Stipules minute, oval, obtuse. Flowers axillary, crowded, peduncled, and very small. Male calyx 5-leaved: corolla none. Fila-

ments 5, longer than the calyx. Female calyx as in the male Berry of the size of a grain of pepper, white, smooth, dry, 3-celled.—*See Roxb. fl. Ind. III. p.* 168 ; *Ainslie, II. p.* 449.—Dr Wight is of opinion that that there are two species of Fluggea in India, though only one has as yet been named and described.—*See Wight, Icon. pl. V. t.* 1875.—Root used in medicine by the Vytheans. The student will frequently find our plant in the middle of hedges.

LILIACEÆ.

Lilyworts.

For description of the order, *See page* 220.

Polianthes, (*Linn.*) From *poly*, many, and *anthos* a flower abundance of flowers.

P. tuberosa, (*Linn.*) Tuberose. Untheemallie, also Munthaurei, *Tam.* Gool shubboo, *Hind.* Undimundaree, *Tel.*

Leaves linear, shorter than the scape : flowers large, pure white, exquisitely fragrant ; calyx none, corolla infundibuliform, recurved, equal ; stamens inserted into the mouth of the tube. The plant emits its scent most strongly after sunset, and has been observed in a sultry evening, after thunder, when the atmosphere was highly charged with electric fluid, to dart small sparks, or scintillations of lucid flame in great abundance, from such of its flowers as were fading.—*See Roxb. fl. Ind. II. p.* 166 ; *Voigt, Hort. Cal.* 656 ; *Firminger, Manual of Gardening, p.* 331.

CYPERACEÆ.

Sedges.

Grass-like or rush-like, cæspitose plants : stems solid without joints or diaphragms, frequently angular : leaves with their sheaths entire : inflorescence mostly capitate : flowers perfect or monœcious, solitary in the axil of each bract (glume or scale) : perianth absent, or existing in the female flowers in the form of a tube (perigynium) : stamens hypogynous, 1—12, commonly

3: anthers 2-celled, innate: ovary 1-celled, superior, with 1 erect ovule, often surrounded by hypogynous bristles called setæ: styles 2-3, more or less united; stigmas undivided, rarely bifid: fruit a crustaceous or bony achene; seed with fleshy or mealy albumen.

Natives of nearly all parts of the world; found especially in marshes, ditches, and about running streams. Known species about 2000.—*See Balfour, Bennett and Lindley.*

CYPERUS, (*Linn.*)

C. ROTUNDUS, (*Linn.*) Mootha, *Hind.* Root tuberous, with filiform fibres; tubers about the size of filberts or acorns, of irregular form, outwardly rusty colored, inwardly white and very fragrant: culms erect, 1—2 feet, triangular, with rounded angles: leaves radical, sheathing, shorter than the culms, glossy: umbels compound, sometimes decompound: involucre 3-leaved, unequal; spikes linear, subsessile. The most common species in India. *C. hexastachyns, Rottb; Roxb. fl. Ind. I. p.* 197; *ed. Carey, p.* 201; *Grah. Cat. B. pl. p.* 231; *Rumph. Hort. Amb. VI. t.* 1, *f.* 1 *and.* 2. The tubers enter as an ingredient into a very fragrant compound powder, used by the natives at some of their festivals. Cattle eat the plant. Hogs are very fond of the roots. A troublesome weed in the garden. The tubers have been used in medicine as tonic and stimulant, and administered in Cholera. The natives employ it in Fevers, Dysentery and Diarrhœa. There are many other species of Cyperus growing in and about Madras, some found of large size near water.

KYLLINGIA, (*Linn.*)

K. MONOCEPHALA, (*Linn.*) Pasoowen-korei, or Patsei koppuk korei, *Tam.* Root fibrous and stoloniferous, culms 6-18 inches high, 3-sided, angles sharp and sides hollowed: leaves as long as the culm, sharp-keeled. Head (of inflorescence) terminal, sessile, oval, generally *white*: involucre 3-leaved, unequal. Flowers

with calyx and oval of 2 chaffy valves each : back of the glume of the corol hispid : stamens 3 ; stigma 3-cleft. Seed obliquely obcordate, much compressed, light brown.—*Roxb. fl. Ind. I. p* 180. *ed. Carey, I. p.* 185; *Wight, Contrib. p.* 91 ; *Gra. Cat. B pl. p.* 232 ; *Rheed. XII. t.* 53 ; ***Rumph.*** *VI. t.* 3, *f.* 2 ; *Voigt Hort. Cal. p.* 724. Thryocephalon nemorale, *Forst.* Roots fragrant and aromatic. A pretty little sedge ; common.

K. TRICEPS, (*Linn.*) Wölleik koppuk korei, *Tam.*

Root somewhat tuberous, with capillary fibres : culms 6—12 inches high, obtusely 3-sided ; angles rounded. Leaves nearly as long as the culm. Head (of inflorescence) terminal, composed of from 3 *to* 6 *sesile, oval, white spikes;* the largest in the centre the rest in the circumference. Involucre and flower as in K. MONOCEPHALA. Stamens seldom more than 2 ; stigma 2-cleft. Seed oblong, compressed, white.—*Roxb. Fl. Ind. I. p.* 181 ; *ed. Carey, I. p.* 186 ; *Gra. Cat. B. pl. p.* 232 ; *Wight, Contrib. p.* 91 ; *Rheed. XII, t.* 52.

GRAMINACEÆ.

GRASSES.

For description of the Order, *see page* 236.

ANDROPOGON, (*Linn.*) From *aner*, a man and *pogon*, a beard ; from the resemblance which the little tufts of hairs on the flowers bear to a man's beard.

A. CONTORTUS, (*Linn.*) Panree pilloo, *Tam.* Culms spreading near the base, there compressed and ramous ; the rest 1-2 feet high, erect, round and smooth. Leaves below bifarious, upper side scattered with a few hairs, margins and mouths of sheaths hairy, spikes always single, terminal, bowing ; rachis jointed, waved, round ; smooth *below*, where it is occupied by male and neuter flowers ; *above* where the female flowers are, it is covered with much short, brown hair. Flowers numerous, imbricated in pairs ; on lower half of spike all neuter or male, awnless,

one sessile, one pedicelled; on upper half, the sessile flower is female, and the pedicelled one male.

Male or neuter flowers. Calyx 2-valved, exterior valve green and covered with stiff white hair; inner valve smooth; margins slightly ciliate. Corol 2-valved; stamens 3 or none. *Female flowers.* Calyx 1-valved, rigid, brown, a little hairy: corol 1-valved, small; the place of the other is supplied by a *very long, twisted arista, Roxb. fl. Ind. I. p.* 53 *ed. Carey, I. p.* 258; *Gra. Cat. B. pl. p.* 238. Heteropogon contortus, (*Beauv*).—H. hirtus, *Pers. Voigt. Hort. Cal. p.* 706.—This species has been somewhere called the *Hygrometric grass,* as the aristæ are very sensitive to moisture; for if one of the awns be moistened with saliva or water, it immediately begins to turn round in the hand, and continues to do so for some time.

This grass is found in great plenty on the ramparts, &c. of the Fort.

ARISTIDA, (*Linn.*) From *arista,* an awn; characteristic of the genus.

A. SETACEA, (*Retz.*) Indian Broom-grass. Thodapum pilloo, also Wilakkamattu pilloo, *Tam.* Shipur-gadi, also Sheeplee kuttah, *Tel.*

Root perennial. Culms straight, generally simple, from 2-4 feet high, and about as thick as a crow's quill at the base, solid, and of a very firm ligneous texture, round and smooth. Leaves few, narrow, margins involute, nerveless, smooth. Panicle bowing with the wind, linear-oblong, composed of 15-20 erectish ramifications. Calyx 2-valved, 1-flowered. Corol 1-valved, with 3 erect awns at the top.—*Roxb. fl. Ind. I. p.* 349. Cattle do not eat it. The paper-makers construct their frames of the culms; these latter tied up in bundles are the brooms of the country. Grows in a dry, barren soil. Two other species, the A. Hystrix, (*Linn.*) and A. depressa, (*Retz.*) are frequently found growing in company with the Broom grass.

CHLORIS, (*Swartz.*) From *chloros*, green, in allusion to the color of the herbage.

C. BARBATA, (*Swz.*) Myel-kondei-pilloo, *Tam.*

Culms below creeping and ramous. Leaves bifarious near base, margins near base and mouths of sheaths ciliate. Spikes terminal from 6-12, sessile, *digitate*, secund, from 1-2 inches long. Rachis striated, not hairy, nor jointed. Flowers pedicelled, in 2 rows on outside of spikes. Calyx 2-flowered; 2-valved and awnless: lower flower sessile and hermaphrodite, its corol consists of 2 unequal valves, the outer one ending in a long colored awn; the other floret always found neuter, on a short pedicel, and consisting of 2 awned valvelets, awn and margin of valvelets colored.—*Roxb. fl. Ind. I. p.* 329; *ed. Carey, I. p.* 331; *Gra. Cat. B. pl. p.* 234; *Voigt, Hort. Cal. p.* 711; *Rheed. XII. t.* 51.—This grass is easily recognized, its head of inflorescence somewhat resembling the crest of the peacock; which gives it its name in Tamil. Common everywhere. Is already a nuisance in the Park, growing in company with the Cynodon Dactylon.

ELEUSINE, (*Gærtn.*) From *eleusis*, one of the appellations of Ceres.

E. ÆGYPTIACA, (*Roxb.*) Famine Corn. Mutthenga pilloo *Tam.* Culms creeping near base, 1-2 feet high, ramous, compressed and smooth. Leaves fringed with hairs. Spikes terminal, 3-5, horizontal, secund; *generally 4-fold, cruciate.* Calyx daggered, from 3-4 flowered. Seed oval, somewhat 3-sided. *Roxb. fl. Ind. I. p.* 344; *ed Carey, I. p.* 345; *Gra. Cat. B. pl. p.* 235; *Rheed. XII, t.* 69; *Rumph. VI. t.* 4, *f.* 1. Dactyloctenium ægyptiacum, (*Beauv.*)

Cattle are fond of this grass. The corn obtained from it is sometimes used by the poor: the seed is smaller than that of the *E. coracana.*

POA, *(Linn.)* From *poa*, signifying grass or herbage.

P. PLUMOSA, (*Retz.*) Poo-pilloo, *Tam.* Culms filiform, many, ramous, spreading a little at base, above erect, 1-2 feet high, round, smooth. Leaves, mouths and margins of sheaths fringed, with long delicate white hairs. Panicle ovate-oblong, composed of many capillary, horizontal, ramous branches, insertions hairy. Spikelets minute, pedicelled, depending, 4-6 flowered.

Found growing in tufts on pasture ground.—*Roxb. fl. Ind. I. p.* 337 ; *ed. Carey, I. p.* 338 ; *Gra. Cat. B. pl. p.* 236 ; *Rheed. XII. t.* 41 ; *Rumph. VI. t.* 4. *f.* 3.

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